Genus Megalaspis Bleeker

Megalaspis Bleeker, Nat. Tijds. Ned. Indie, vol. 1, pp. 343, 352, 1851. (Type ~~Block~~ ~~Bleeker~~ cordyla Linnaeus, monotypic. (Megalaspis Angelin 1851 in trilobites apparently later?)

Day, Proc. Zool. Soc. London, 1869, p. 300 (Orissa). 1/m Bleeker, Verhandel. Kon. Akad. Wetensch. Amsterdam, no. 3, vol. 14, 1874, p. 12 (Singapore, Pinang, Java, Borneo). 1/m Day, Fishes of India, pt. 2, 1876, p. 796, pl. 46, fig. 4 (Orissa; Lower Bengal). 1/2 Bleeker, Atlas Ichth. Ind. Néerland., vol. 9, 1877, pl. (1) 384, fig. 3. 1/2 Day, Fauna Brit. India, Fishes, vol. 2, 1887, p. 127, fig. 51. 1/m Johnstone, Fasc. Malayensis, Zool., vol. 2, 1903, p. 293 (outside Patani Bay). 1/2 Duncker, Mitteil. naturh. Mus. Hamburg, vol. 21, 1903 (1904), p. 154 (Kuala Lumpur). 1/m Lloyd, Records Indian Mus., vol. 1, 1907, p. 226 (Akyab).

→ Otolithus bipinosus Cuvier, Hist. Nat. Poiss., vol. 5, 1830, p. 65. Rangoon. 1/m Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 310 (compiled).

Body elongately fusiform, somewhat compressed. Head moderate, pointed. Snout conic. Eye well advanced in head, high, with broad adipose lids. Maxillary extends below eye. Teeth small, equal in jaws, on vomer, palatines and tongue, in bands, mandibular uniserial. Scales small. Front part of lateral line short arch and straight section long, with deep scutes deeper than $\frac{1}{3}$ body depth and strong keel along side of caudal peduncle. Basal part of first and second dorsals in scaly groove. Spinous dorsal moderately high anteriorly. Soft dorsal and anal equal, each followed by 6 to 10 finlets. Pectoral long, falcate.

One species.

Megalaspis cordyla (Linnaeus)

Scomber cordyla Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 298, 1758 (type locality, "America" [= Indo-Pacific]); ed. 12, pt. 1, p. 493, 1766 (copied). — Gmelin, Syst. Nat. Linn., pt. 1, p. 1332, 1789 (copied). — Walbaum, Artedi Pisc., vol. 3, p. 214, 1792 (copied). — Schneider, Syst. Schth. Bloch, p. 23, 1801 (copied).

Scomber cordila Bonnaterre, Tabl. Dchth., p. 139, 1788 (part).

Pterotolithus, new subgenus.

Πτερον, fin; Atolithus; with reference to the large anal.

Type. Atolithus maculatus Cuvier.

Anal with 10 to 12 branched rays. Body, soft dorsal and caudal with dark blotches.

Diagnosis. Existing mished from subgenus Atolithus by its larger anal fin and dark blotched coloration).

Atolithes maculatus Cuvier

Atolithus maculatus (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Pois., vol. 5, 1830, p. 64. Batavia. Valenciennes, Règne Animal, Poiss., Ed. ill., 1839, pl. 27, fig. 2. Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 310 (Malay Peninsula). Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, 1849, p. 1044 (Pinang, Malayan Peninsula; Singapore).

Megalaspis cordyla Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 336, 1902 (Formosa).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 57, p. 66, 4 Jan. 1905 (Padang material).

~~4-5~~ 5a

depth 3 2/5; head 3. Snout 2 in head; eye 5, 2 4/5 in snout; maxillary reaches 4/5 to eye, expansion slightly greater than eye, length 2 1/2 in head; teeth small; barbels reach ventrals; interorbital moderately low.

Scales 30 in lateral line; 2 above, 7 below, 17 predorsal forward of nostril, 3 rows on cheek of which lowest row on preopercle flange.

D. VIII – I, 8 or 9, 2nd spine 1 3/5 in head, first ray 2 3/4; A. I, 6 or 7, first ray 3; caudal 1, deeply forked, lobes pointed; least depth of caudal peduncle 3 1/3; pectoral 1 1/4; ventral 1 1/5.

Above rosy, below pales. Iris rosy, margin of pupil golden. Barbels golden. Four blue horizontal lines

Megalaspis cordyla Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. , June 1904 (Padang, Sumatra). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 229, 1905 (1906) (Samoa), — Evermann and Seale, l.c., vol. 26, p. 65 (Bulan; Jolo). — Seale and Bean, Proc. U. S. Nat. Mus., vol. 33, 1907, p. 242 (Zamboanga). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 250, 1907 (1908) (Manila). — McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 139, April 21, 1915 (7 miles N.E. of Bowen, Queensland, in 16 fathoms). — Fowler, Copeia, No. 58, p. 63, June 18, 1918 (Philippines).

rays on second dorsal. Pectoral and lower fins orange.

Atolithus reevesii Richardson is said to be like Atolithus aureus, but differs in the more blunt, rounded and prominent snout, shorter rounded caudal, less cuneate and preopercle spinously toothed on upper limb and rounded corner, where teeth large; on its under limb teeth have usual crenate dentate character. Dentition and pores as in A. aureus. D. X, I, 31, more deeply divided than in A. aureus, and 2 equal tips of bony opercle shorter and stronger; A. II, 7, second spine shorter than soft rays, stout and finely striate; P. 19. On upper half of body oblique lines, which pass same wise below lateral line.

— Wakuja, Ann. Carnegie Mus., vol. 15, p. 147, pl. 15, fig. 1, 1924 (Nagasaki, Formosa). — Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 364, March 1925 (Taihoku and Toku, Formosa).

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 533, Oct. 1927 (Natal).

— Whitley, Rec. Austral. Mus., vol. 15, no. 5, p. 298, pl. 24, fig. 2, April 6, 1927 (Manila; Madras; Bandar Maharani, Kuala Kurau, Trengganu, Malacca, Cape Rachado, Beri Api; Singgora, Siam). La Perouse, New South Wales;

— McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 183, Sep. 10, 1929 (reference).

2 rows on cheek, Tubes in lateral line large, well exposed and each with basal scale. Scales with 1 10 to 14 basal radiating striae; 58 to 84 apical denticles with 1, or 2 transverse series of basal elements; ~~caudal~~ circuli moderate.

D. VII — I, 9, I, third dorsal spine 1 3/4 to 1 7/8 in total head length, first ray 1 2/5 to 1 1/2; A. II, 8, I, second spine 2 1/2 to 3 1/5, first ray 1 3/4 to 2 1/8; caudal 1 1/3 to 1 2/5, little emarginate behind, lobes rounded; least depth of caudal peduncle 2 1/8 to 2 2/5; pectoral 1 2/5 to 1 3/5; ventral 1 2/3 to 1 3/4.

Body with 4 broad blackish brown longitudinal bands, greatly wider than narrow whitish intervening whitish lines or bands; all extending little on head and more so for 3 reaching caudal peduncle; median

— Fowler, Bull. Bishop Mus., no. 22, p. 32, 1925 (Samoa); Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 214 (Durban); vol. 79, 1927, p. 268 (Philippines). — Jordan, Evermann, Tanaka, Proc. Cal. Acad. Sci., ser. 4, vol. 16, p. 655, November 14, 1927 (Honolulu). — Fowler, Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, p. 110, September 30, 1928 (Bombay); Mem. Bishop Mus., vol. 10, p. 143, 1928 (compiled). — Herre, Journ. Pan Pac. Research Inst., vol. 6, no. 4, p. 12, October-December 1931 (New Hebrides). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, 1934, p. 444 (Durban); Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (reference).

Bay, Mekran, India, Ceylon, Penang, Malayan Peninsula, Singapore, Philippines, China.

Atolithus tridentifer Richardson is probably a synonym, like several other nominal forms I unite with this species. It is imperfectly noticed; Two strong upper canines and 1 below near symphysis, with equal row of lateral subulate teeth in both jaws, more close set in lower and (under lens) narrow villiform band within others above and below, few intermixed with principal ones; preopercle armed feebly by small acute teeth; opercle with 2 narrow spines. D. X, I, 27; A. II, 6; P. 15. Pale silvery, with slight bluish gray tint along back. Lower half of caudal, front of anal and pubic fins gall stone yellow. Rest

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 193, fig. 40, 1931 (Bagan Api Api; Batavia).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 444, 1934 (Durban); Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (reference); Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 140, 1935 (Bangkok; Paknam; Sriracha).

Depth 2 3/4 to 3; head 2 1/2 to 2 2/3, width 1 7/8 to 2 1/6. Snout 4 1/5 to 4 1/2 in head from snout tip; eye 2 2/5 to 3, about twice snout or interorbital; maxillary reaches 3/4 to 4/5 in eye or to or little beyond hind pupil edge, expansion 2 1/4 to 2 2/5 in eye, length 1 1/5 to 2 1/8 in head; bands of minute villiform teeth in jaws, on vomer and palatines; interorbital 4 1/2 to 6, nearly level; preopercle ridge entire, edge minutely serrate; preorbital entire. Gill rakers 5+16, lanceolate, twice gill filaments or 2 1/5 in eye.

Scales 24 or 25 in lateral line to caudal base and 3 more on latter, 2 above, 6 below, 3 or 4 predorsal,

Scomber rottleri Bloch, Naturg. Ausland. Fische, vol. 7, p. 88, 1793 (type locality not given [redacted]); vol. 9, p. 108, 1795 (Coromandel). — Forster, Fauna Indica, p. 16, 1795. — Schneider, Syst. Ichth. Bloch, p. 25, 1801 (Tranquebar). — Shaw, General Zool., vol. 4, pt. 2, p. 598, 1803 (copied). — Shaw and Nodder, Natural. Miscellany, vol. 20, pl. 850, 1808 (Indian seas).

Caranx rottleri Rüppell, Atlas Reise nördl. Afrika, Fische, p. 102, 1828 (Massaua).

Amia aroubiensis (Hombron and Jacquinot)

Apogon aroubiensis Hombron and Jacquinot, Voy. Astrolabe, Zool., vol. 3, 1853, p. 31, pl. 1, fig. 1. Aroub, Malaysia.

Amia aroubiensis Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 241, fig. 35 (Apia and Pago Pago, Samoa).

— Radcliffe, Proc. U. S. Nat. Mus., vol. 41, 1911, p. 25, pl. 22 (Jutu Bay, Philippines, Celebes, Apia).

Apogon fasciata aroubiensis Mc Culloch, Biol. Res. Endeavour, vol. 3, no. 3, 1915, p. 118 (Murray Island; Suva, Fiji).

Apogon fasciatus (non White) Günther, Journ. Mus. Godeffroy, vol. 1, pt. 1, 1873, p. 19, pl. 20, fig. a (part).

— Bleeker, Verh. Batavia. Genoot. (Bali), vol. 22, p. 3, 1849 (west coast of Bali).

— Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1106, 1849 (1850) (Pinang Sea; Malay Peninsula; Singapore). — Jerdon, Madras Journ. Lit. Sci., p. 136, 1851. — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 424, 1860 (China; Madras; Malay Peninsula).

— Day, Fishes of Malabar, p. 8, 1865. — Kner, Reise Novara, Fische, p. 150, 1865 (Java; Singapore; Hong Kong). — Playfair, Fishes of Zanzibar, p. 58, 1866 (Aden; Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 453, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 213, 1876. — Günther, Journ. Mus. Godeffroy, vol. 5, pt. 11, p. 130, 1876 (Samoa).

11 specimens. Batan Island. June 5, 1909. Length 25 to 49 mm.

3 specimens. Batan Island. July 22, 1909. Length 24 to 42 mm.

16057. Canimo Island, near Laet. June 15, 1909. Length 25 to 64 mm. 36 examples.

16 examples. Subat Bay, Luzon. June 23, 1909. Length 23 to 40 mm.

5315. Jolo Reefs. March 6, 1908. Length 86 mm. (Type. 68400, U. S. N. M.)

5316. Jolo Reefs. March 6, 1908. Length 56 mm.

6 specimens. Maculabo Island, east coast Luzon. June 14, 1909. Length 22 to 43 mm.

1 example. Mahinog, Camiguin Island, between Samar and Leyte. August 2, 1909. Length ? (head only). From torch fisherman.

22406. Nogas Point, Panay. February 4, 1908. Length 18 to 22 mm. 2 examples.

— Károli, Termesz. Füzetek, Budapest, vol. 5, p. 160, 1881 (Singapore).

— Gogorza, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 17, p. 290, 1888 (Manila).

— Clay, Fauna British India, Fishes, vol. 2, p. 150, 1889.

— Sauvage, Hist. Madagascar, Poiss., p. 518, 1891 (reference). — Elera, Cat. Fauna Filipinas, vol. 1, p. 509, 1895 (Manila; Luzon);

— Regan, Ann. Natal Mus., vol. 1, pt. 3, p. 246, May 15, 1908 (Durban Bay). — Gilchrist and Thompson, Ann. South African Mus., vol. 6, pt. 3, p. 239, 1909 (Durban); Ann. Durban Mus., vol. 1, pt. 4, p. 387, Maj 21, 1917 (reference).

brown band on soft dorsal, another on anal, caudal edged narrowly with brown above and below and ventrals terminally brown. Most examples show median dark lateral band with blackish spot in dark area of caudal base. Others with short dark postocular bar from upper part of iris, but not extending beyond head.

East Indies, Philippines, Australia.

Our material all agree with the account of this species as described and discussed by McCulloch.

Caranx rotteri Rüppell, Neue Wirbelth., Fische, pp. 48, 52, 1835 (reference).
(Cuvier, Hist. Nat. Poiss., vol. 9, p. 29, 1833 (Coromandel; Malabar; Red Sea; "Malaga" = Malacca). —

— Richardson, Ichth. China and Japan, p. 273, 1846 (China Sea).

Trachurus rotterii Bleeker, Nat. Geneesk. Arch. Ned. Indië, vol. 2, p. 517, 1845 (Batavia).

15 examples. Sablayan, Mindoro Island. December 13, 1908. Length 26 to 45 mm.

1 example. Siruao Island reef, southern Palawan. December 31, 1908. Length 35 mm.

2018. Ulugan Bay, near mouth of Bakeli River, Palawan. December 28, 1908. Length 68 mm.

51 examples. Basa Reef, Gulf of Boni, Celebes. December 17, 1909. Length 17 to 37 mm.

Megalaspis rottleri Bleeker, Nat. Tijds. Ned. Indie, vol. 3, p. 5, 1852 (Singapore), p. 445 (Banka), p. 690 (Wahai); ~~(Makreel), vol. 24~~ Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 49, 1852 (Batavia; Cheribon; Pasuruan; Bezuki); Nat. Sch. Bengal), vol. 25, p. 44, 1853 (reference); Nat. Tijds. Ned. Indië, vol. 6, p. 457, 1854 (Amboina), p. 227 (Macassar), p. 312 (Bantem, Tjiringin); vol. 8, p. 393, 1855 (Amboina); vol. 10, p. 347, 1856 (Rio, Bintang); vol. 11, p. 419, 1856 (Muntok, ~~Banka~~ Java); vol. 13, p. 384, 1857 (Batjan); Act. Nov. Sci. Ind. Neerl., vol. 2, no. 7, p. 5, 1857 (Amboina); vol. 3, no. 6, p. 2, 1857-58 (Sinkawang, Borneo); Nat. Tijds. Ned. Indie, vol. 15, p. 242,

Depth 3 1/5 to 3 1/3; head 3 to 3 7/8, width 2 1/8 to 2 3/4. Snout 3 7/8 to 4 1/8 in head from snout tip; eye 4 2/3 to 4 4/5, 1 1/8 to 1 1/5 in snout, 1 1/8 to 1 1/4 in interorbital; maxillary reaches opposite hind pupil edge, 2 1/5 to 2 1/3 in head from snout tip; pair of wide set upper canines and one symphyseal mandibular; interorbital 3 3/4 to 3 7/8, broadly convex; preopercle edge membranous. Gill rakers 9+16, lanceolate, slender, equal gill filaments.

Scales 5-9 to 6-2 along close above lateral line to caudal base and 7 to 10 out over caudal medially; tubular scales 49 or 50 in lateral line to caudal base; 8 or 9 scales above lateral line, 9 or 10 below, 30 to 32 predorsal. Scales with 1-2 basal radiating striae; circuli very fine.

1858 (Singapore); vol. 16, p. 407, 1858 (Japara, Java); vol. 19, p. 435, 1859 (Sumbawa); Act. Vol. Sci. Ind. Neerl. (Sumatra), vol. 8, p. 12, 1859 (Benculen); Ned. Tijdw. Dierk., vol. 2, p. 174, 1865 (Siam); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 293, 1868 (Rio, Bintang)..

— Klunzinger, Fische Roth. Meer., vol. 1, p. 91, 1884.

Otolithes ruber Jordan and Starks, Ann. Carnegie Mus., vol. 11, nos. 3-4, Nov. 5, 1917, p. 452 (Ceylon). 1/2m Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 285 (Orani; Orion); Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, 1928, p. 115 (Bombay).

Otolithus tridentiger Richardson, Ichth. China Japan, 1846, p. 225. China Sea, Canton. 1 Elera, Cat. Fauna Filipinas, 1895, p. 502 (Luzon; Manila). 2m

Otolithus aureus Richardson, Ichth. China Japan, 1846, p. 224. Canton. 1/2m Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1924 (1930), p. 610, fig. 2 (Hong Kong).

Otolithus reevesii Richardson, Ichth. China Japan, 1846, p. 224. Canton.

Otolithus subnaculatus Blyth, Journ. Asiatic Soc. Bengal, vol. 29, 1860, p. 141. Vitany River.

Carangx (Pleiopterus) besselii (Agassiz) Quaritch, Proc. Celebes, London, pl. 1, 1874 (type locality, Celebes).

interorbital. Second dusky brown band begins over snout, extends over lateral line anteriorly and then back to middle of base of upper caudal lobe. Third dusky brown band from snout through eye wide as pupil - and follows median axis of body to caudal base. Fourth dusky brown band from infraorbitals to pectoral base, then along lower surface of caudal peduncle to middle of lower caudal lobe, and like 2 preceding dark bands reflected out over caudal fin. Fifth dusky brown band along lower side of body to last anal rays basally. Fins all pale brownish, spinous dorsal largely dark terminally, subbasal longitudinal

Depth $3\frac{1}{3}$ to $4\frac{1}{4}$; head $3\frac{2}{3}$ to $4\frac{1}{3}$, width $1\frac{4}{5}$ to $1\frac{7}{8}$. Snout $3\frac{1}{4}$ to 4 in head from snout tip; eye $3\frac{1}{4}$ to $4\frac{3}{5}$, greater than snout in young to $1\frac{1}{4}$ in snout from snout tip with age, subequal with interorbital in young to $1\frac{1}{4}$ in interorbital with age, adipose eyelid broad; maxillary reaches $\frac{2}{3}$ to eye, or $\frac{1}{2}$ in eye in young, expansion $1\frac{1}{2}$ to 2 in eye, length $1\frac{4}{5}$ to $2\frac{1}{2}$ in head from snout tip; villiform bands of teeth in jaws, on vomer and palatines; interorbital $2\frac{3}{4}$ to $3\frac{2}{5}$, convex. Gill rakers 9+19, lanceolate.

Scales 25 or 26 + 54 to 58 in lateral line; arch $4\frac{1}{3}$ to $4\frac{3}{4}$ in straight section. Scales very

small on cheek and postocular. Chest and breast naked, except small patch before ventrals. Soft dorsal and anal anteriorly with low basal scaly sheath. Scales with 40 to 48 circuli.

D. $\frac{I}{III}$, $\frac{VIII}{III}$ – $\frac{I}{III}$, 9 to $\frac{I}{III}$, 12 + 8 to 10, third spine $2\frac{1}{3}$ to $2\frac{2}{3}$ in total head length, first branched ray 2 to $2\frac{1}{8}$; A. $\frac{II}{II}$ – $\frac{I}{III}$, 8 to $\frac{I}{III}$, 11 + 6 to 8, first ray $2\frac{1}{5}$ to $2\frac{1}{4}$; caudal $1\frac{1}{3}$ to $1\frac{1}{2}$, forked; least depth of caudal peduncle $9\frac{1}{4}$ to 10; ventral $1\frac{7}{8}$ to 2, rays $\frac{I}{III}$, 5; pectoral $1\frac{2}{5}$ in head in young, to 3 in fish without caudal, with age, rays I, 20.

Back olive brown, below whitish. Dorsals, caudal and upper half of pectoral olive gray,

otherwise fins whitish. In life back greenish, abdomen and fins yellowish.

Red Sea, Arabia, Zanzibar, Natal, Madagascar, India, Bengal Bay, Malay, East Indies, Philippines, Siam, China, Formosa, Queensland, New South Wales, Polynesia, Hawaii.

8,418. Cebu market. March 20, 1909. Length 478 mm.

21 examples. Lingayen Gulf (east of Point D. Grueet), west coast of Luzon. May 11, 1909. Length 87 to 122 mm.

10665. Manila market. June 17, 1908. Length 141 mm.

8298, 17542. Sorsogon market. March 12, 1909. Length 204 to 277 mm.

9048. Tacloban market. July 25, 1909. Length 210 mm.

Snyder, Proc. U. S. Nat. Mus., vol. 32, 1907, p. 93 (Formosa and Apia). 1/m

Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, supplement band 1, 1910, p. 48 (Yokohama and Kagoshima).

Upeneus russellii Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 465. (On Rahtee goolivinda Russell 1803). L/m Richardson, Ichth. China Japan, 1846, p. 220 (Canton, China Seas). 1/m Bleeker, Verhandel. Batavia. Genootsch. (Percoid.), vol. 22, 1849, p. 62 (Batavia).

Upeneus russelii Cuvier, Règne Animal, ed. 2, vol. 2, 829, p. 157. (On Rahtee goolivinda Russell 1803).

Upeneus malabaricus Valenciennes, Hist. Nat. Poiss., vol. 3, 1829, p. 467. Malabar. 1/m Bleeker, Verhandel. Batavia. Genootsch. (Nal. Ichth. Bengal.), vol. 25, 1853, p. 34. 1/m Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 407 (Philippines). 1/m Day, Fishes

A. h. V. P., four examples. Philippines. Commercial Museum of Philadelphia.

A. h. V. P., two examples. Durban, Natal. 1922. H. W. Bell-Marley. Length 282 to 335 mm.

A. h. V. P., three examples. Philippines. 1923. Rev. Joseph Clemmens. Purchased.

A. h. V. P., two examples. Bombay. 1925. Prof. F. Hallberg. Purchased. Length 228 to 230 mm.

(copied). ♂ Schneider, Syst. Ichth. Bloch, 1801, p. 527 (New Holland). Enoplosus armatus Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 133, pl. 20 (New Holland). ♂ Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 81 (Sydney; Australia). ♂ Schmeltz, Cat. Mus. Godeffroy, No. 4, 1869, p. 142 (Australia). ♂ Castelnau, Proc. Zool. Acclimatis. Soc. Victoria, vol. 1, 1872, p. 47 (Melbourne market); ♂ Schmeltz, Cat. Mus. Godeffroy, No. 6, 1877, p. 11 (Sydney). ♂ Macleay, Proc. Linn. Soc. New South Wales, vol. 5, 1881, p. 309 (east and south coasts Australia). ♂ Woods, Fish. Fisher. New South Wales, 1883, p. 32, pl. 2. ♂

Genus Decapterus Bleeker

Decapterus Bleeker, Nat. Tijds. Ned. Indie, vol. 1, pp. 342, 358, 1851. (Type Caranx Laurra Valenciennes, monotypic.)

Eustomatodus Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 261. (Type Decapterus muro-adsi Schlegel, designated by Jordan, Genera of Fishes, pt. 3, p. 316, 1919.)

Gymnepignathus Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 261. (Type Decapterus macrosoma Bleeker, monotypic.)

Gymneipignathus Jordan, Genera of Fishes, pt. 3, p. 316, 1919. (Type Decapterus macrosoma Bleeker. (Error.))

~~4491~~

Johnius valenciennii Eydoux and Souleyet,
Voyage Bonite, Zool., vol. 1, 1841, p. 159,
pl. 1, fig. 2. China Seas near Macao.

Depth 3 1/4 to 3 1/3; head 3 to 3 1/5, width 2
to 2 1/8. Snout 3 4/5 to 4 in head; eye 5 to 6,
1 1/5 to 1 3/5 in snout, 1 to 1 1/8 in interorbital;
maxillary reaches nearly opposite hind eye
edge, expansion 1 1/8 to 1 1/5 in eye, length
2 1/4 to 2 1/2 in head; 6 pores at chin; row
of upper large teeth exposed with closed
jaws and inner row of mandibular teeth
large; interorbital 4 1/3 to 5 1/4, broadly
convex; preopercle edge denticulate. Gill
rakers 6+9, lanceolate, short, half of gill
filaments.

Scales 56 to 67 along lateral line to caudal
base and 7 more on latter; scales 41 to 43
in lateral line to caudal base and 22
to 32 more over caudal fin; 8 or 9 scales
above, 10 or 11 below, 38 to 40 predorsal.

Evepigygmus Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 261. (Type Decapterus hypodus Gill, monotypic.)

~~14490~~

Bola chaptis Buchanan-Hamilton, Fishes of Ganges, 1822, pp. 77, 368, pl. 10, fig. 25. Ganges estuaries.

Corvina chaptis Cuvier, Hist. Nat. Poiss., vol. 5, 1830, p. 130 (on Buchanan-Hamilton). 1/m Blyth, Journ. Asiatic Soc. Bengal, vol. 1860, p. 141 (Vitang River). 1/m Mason, Burmah Nat. Resources, 1860, p. 695.

Corvina platycephala Cuvier, Hist. nat. Poiss., vol. 5, 1830, p. 132. Java.

Sciaena platycephala (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss., ~~Syst.~~, vol. 5, 1830, p. 132 (name in text).

Sciaena maculata (not Bloch) Gray, Illustr. Indian Zoology, vol. 2, 1832, pl. 89, fig. 1. India. 1/m Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 291 (copied). 1/m Day, Fishes of Malabar, 1865, p. 50. 1/m Thurston, Pearl Fisher. Gulf of Manaar, 1890, p. 92 (Tuticorin).

Johnius maculatus Blyth, Journ. Asiat. Soc. Bengal, 1860, p. 141 (Vitang River).

Body elongate, slightly compressed, almost evenly fusiform. Head compressed, moderate or small, pointed. Snout conic. Eye large or moderate, little advanced in head. Mouth small, jaws nearly equal. Maxillary rather expanded behind, with supplemental bone. Premaxillaries protractile. Teeth little developed, weak or obsolete. Gill rakers lanceolate, slender, 28 to 40 below. Shoulder girdle with slight transverse groove at junction with isthmus. Scales moderate, enlarged whole course of lateral line though only posterior spinous and bony. First dorsal well developed, persistent: second dorsal and anal each with detached finlet behind. Free anal spines very

strong and abdomen shorter than soft anal.

Fishes of small size, rather numerous and widely distributed in tropical seas.

Analysis of Species

a.' Teeth on tongue obsolete, wholly absent, or present as mere small patch; anal rays 24 to 26; fins tinged red in life. russelli.

a.² Teeth on tongue in band; anal rays 26 or more; fins without red in life.

b.' Vomer without median narrow longitudinal strip of teeth.

c.' Dorsal not over $5\frac{1}{2}$; upper jaw not toothed; maxillary reaches midway between nostril and front border of eye; opercular membrane finely serrated. macrozoma.

c.² Dorsal not less than $5\frac{1}{3}$; upper jaw toothed; maxillary reaches front border of eye; opercular membrane not serrated. sanctae-helenae.

b.[2] Vomer with median narrow longitudinal strip of teeth.

d.' Pectoral less than head.

e.' depth less than 5; pectoral long as head without snout; scutes on hind $\frac{2}{3}$ of straight section of lateral line; highest scutes not over half of eye. lajang.

e.[2] depth more than 5; pectoral much longer than head without snout; scutes along whole length of straight section of lateral line; highest scute over half of eye. maru-adsi

d.[2] Pectoral slightly longer than head. luvroides.

1246

Decapterus russelli (Rüppell)

Caranx russelli Rüppell, Atlas Reise nördl. Afrika, p. 99, 1828 (type locality, Tor, Red Sea).

Decapterus russellii Klunzinger, Fische Roth. Meer., vol. 1, p. 21, 1884 (note).

— Weber, Siboga Exped., vol. 57, Fische, p. 393, 1913 (Macassar).

— Ogilby, Mem. Queensland Mus., vol. 3, p. 59, pl. 19, Jan. 28, 1915 (Darnley Island).

c.[2] depth of body 3 1/2 to 4.

g.' Body without black transverse bands.

h.' Opercle and first dorsal pale.

borneensis.

h.[2] Opercle blue gray; first dorsal black on upper half, outer edges of caudal, anal and paired fins gray. osseus.

g.[2] Silvery, with 4 or 5 black transverse bands.

maculatus.

b.[2] dorsal rays 26 to 30.

i.' depth of body 2 4/5 to 3 1/2.

j.' Teeth above uniserial, lower biserial, at least anteriorly. leptolepis.

j.[2] No enlarged inner row of mandibular teeth.

ka.' No pale band along lateral line.

l.' Eye 3 4/5 to 4 1/8 in head. belengeri.

l.[2] Eye 4 1/3 to 4 2/5 in head.

novae-hollandiae.

ka.[2] Pale band along lateral line. caudata.

Case 13 throughout

Decapterus russelli Steindachner, Denkschr. Akad. Wiss. Wien, math.-naturw. Kl., vol. 71, p. 142, 1907 (Ras Shoab, Sokotra; Mabalia).

(Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, p. 352, 1901 (Yokohama; Nagasaki),

— Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 465, 1906 (Susaki).

— Weber, Siboga Exped., vol. 57, Fische, p. 393, 1913 (Macassar).

— Wakiya, Ann. Carnegie Mus., vol. 15, p. 149, pl. 15, fig. 2, 1924 (Tokyo Bay; Kii; Iwayama; Ryukyu).

— McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 184, Sep. 10, 1929 (references)

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 534, Oct. 1927 (Natal).

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 196, fig. 41, 1931 (Habasser; Saleyer; Red Sea).

Amia kartzfeldii (Bleeker)

Apogon kartzfeldii Bleeker, Nat. Tijds. Ned. Indië, vol. 3, 1852, p. 254. (Amboina. — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 242 (Amboyna).

Apogon kartzfeldi Martens, Preuss. Exped. Ost-Asien, vol. 1, 1876, p. 386 (Ternate). — Weber, Siboga Exped., vol. 57, Fische 65, 1913, p. 223 (Siau; Laiwui).

Amia kartzfeldi Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 86 (Ternate, Buru, Amboina, Goram); vol. 8, 1876-77, pl. (69) 346, fig. 2. — Steindachner, Abhandl. Senckenberg. Naturf. Gesell., vol. 25, 1900, p. 417 (Ternate). — Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 72 (Baem and Cavite).

Caranx kurra Cuvier, Hist. Nat. Poiss., vol. 9, p. 44, 1833 (on Kurra wodagawah Russell, Fishes of Coromandel, vol. 2, p. 30, pl. 139, 1803, type locality, Vizagapatam). — Jerdon, Madras Journ. Lit. Sci., 1851, p. 137. — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 427, 1860 (Moluccas). — Day, Proc. Zool. Soc. London, 1865, p. 24 (Cochin, Malabar); Fishes of Malabar, p. 81, 1865. — Klunzinger, Verh. Zool. bot. Ges. Wien, vol. 21, 1871, p. 453 (Red Sea). — Day, Fishes of India, pt. 2, p. 214, pl. 48, fig. 5, 1876 (Madras).

1760

Besides the little known species I have arranged the following tentative key to include the established species of this genus in the Indo-Pacific.

Analysis of ~~11111~~ species 6 Lbsmedy

a.' Tubular scales in lateral line 43 to 53.

b.' Dorsal rays 22 to 26.
c.' Depth of body 3 to 3 1/2.
d.' Dorsal rays 22 or 23.

e.' Lower gill rakers 7; scales 5-2 in lateral line.

goma.

e.² Lower gill rakers 9; scales 41 to 43 in lateral line.

diacanthus.

d.² Dorsal rays (vary 23 in aeneus) 24 to 26.

f.' Spinous dorsal dusky marginally; no dark opercular blotch.

aeneus.

f.² Spinous dorsal blacks in young, leaving only black edge with age; diffuse dark blotch on opercle, paler with age.

coibor. Cave 13 more only

Decapterus kurra Bleeker, Nat. Tijds. Ned. Indie, vol. 1, p. 358, 1850 (Batavia; Pamankan); vol. 2, p. 210, 1851 (Boeloekamba); Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 50, 1852 (Batavia; Pamanukan); (Bengal.), vol. 25, p. 44, 1853 (reference); Nat. Tijds. Ned. Indie, vol. 8, p. 203, 1855 (Ternate); Act. Nov. Sci. Ind. Neerl. (Celebes), vol. 8, p. 39, 1860 (Celebes).

Cave 129

Johnius amoyensis (Bleeker)

Pseudosciaena amoyensis Bleeker, Nederl. Tijdschr. dierk., vol. 1, 1863, p. 144. Amoy; vol. 2, 1865, p. 56 (Amoy).

Sciaena amoyensis Steindachner, Denkschr. kkad. Wiss. Wien, math.-naturw. Klasse, vol. 59, pt. 1, 1892, p. 362 (Shanghai).

Depth 5 in total; head 4 1/2. Eye 4 in head, greater than interorbital; mouth moderately oblique, jaws equal; maxillary 2 1/4 to 2 1/3 in head; teeth in bands in jaws, outer upper and inner lower row enlarged, no canines; preopercle denticulate.

Scales 55 in lateral line to caudal

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 19, 1906 (1907) (Bulan).

— Fowler, Copeia, No. 58, p. 63, June 18, 1918 (Philippines).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 268 (Philippines examples).

— Ishida, Philippine Journ. Sci., vol. 26, No. 3, p. 359, March 1925 (Taihoku, Formosa).

As there understood they differ from Veiaena chiefly in the absence of the mandibular barbel. I do not accept Jordan and Thompson's conclusions as to the nomenclature of this genus. It appears to me formal designation of type is surely a priori claim in all cases. Bola Buchanan Hamilton cannot be admitted as a seiaenid as its tautonymic genotype Cyprinus bola is a cyprinid.

? Caranx kiliche Cuvier, Hist. Nat. Poiss., vol. 9, p. 43, 1833 (type locality, Pondicherry).

Decapterus kiliche Bleeker, Verh. Batavia. Genoot. (Nat. Sch. Bengal), vol. 25, p. 44, 1853 (reference).

Caranx pseudopteryginus Bleeker, Journ. Indian Arch., vol. 3, p. (69) 71, 1849 (type locality, Macassar).

base; 75 along above lateral line;
8 or 9 above lateral line to spinous
dorsal.

D. XI, 27, spines slender, fourth
longest and less twice body depth,
soft fin with low basal scaly sheath;
A. II, 7 or 8; caudal 5 1/4 in body;
pectoral acute, 6 3/5 in body.

Bluish green above, silvery below.
Iris yellow. Fins yellow, membranes
brownish gray. Length 270 mm.
(Bleeker.)

China. Perhaps not distinct from
Johnius plagiostomus, the imperfect
description hardly permitting identification.

Caranx ecclipsifer de Vis, Proc. Linn. Soc. New South Wales, vol. 9, ser. 3, 1884, p. 541 (type locality, Cape York).

Decapterus? ecclipsifer Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 9, 1911.

over head and snout, more or less over vertical fins and mostly adherent. Lateral line with simple, bifurcate or branched tubes. Dorsals as 2 deeply separated fins, first of 9 or 10 spines joined at least basally with 1½ to 3½ soft rays. Anal with 1 or 2 spines, 6 to 9 rays, second spine variably weak or strong. ~~with age~~ Caudal variably with age truncate, cuneate or rounded. Pectoral rays 16 to 20. Outer or first ventral ray often as prolonged filament, especially in young.

The largest group of the Indian and West Pacific sciaenids, also with fewer species in the tropical Atlantic.

V253

Depth 4 1/3 to 5; head 3 to 3 3/5, width 2 1/5 to 2 2/5. Snout 2 1/3 to 3 1/8 in head from snout tip; eye 3 1/3 to 3 4/5, 1 1/5 to 1 1/3 in snout, slightly greater than interorbital, adipose eyelids expose only median third of eye; maxillary reaches 4/5 to 7/8 eye or 1/8 in eye, expansion 2 to 2 7/8 in eye, length 2 3/4 to 3 in head from snout tip; interorbital 3 3/4 to 4 1/2, level. Gill rakers 12 + 33 or 34, lanceolate, 1 1/3 in gill filaments or 1 3/4 in eye.

Scutes 33 to 35 in straight section of lateral line, last 4 on caudal base; straight section 1 1/3 to 1 1/2 in arch.

D. VIII — I, 29 + 1 or I, 30 + 1, third

spine $1\frac{9}{10}$ to $2\frac{1}{8}$? in total head, first ray $2\frac{1}{4}$ to $2\frac{3}{4}$; D. II-I, 23 +1- or I, 24 +1, second ray $2\frac{4}{5}$ to $3\frac{1}{5}$; caudal forked; least depth of caudal peduncle 8 to $8\frac{1}{3}$; pectoral $1\frac{1}{5}$ to $1\frac{1}{4}$?; ventral $2\frac{1}{8}$ to $2\frac{1}{2}$, rays I, 5; pectoral rays II, 20.

Back brown, with gray to olive and bluish shades. Side and below white, with metallic or blue tints. Small dusky spot on hind opercle edge, less than half of pupil. Iris pale. Fins brown, lower whitish.

Red Sea, Arabia, Zanzibar, Natal, Madagascar, India, Malay, East Indies, Philippines, Riu Kiu, Japan, Queensland.

Four examples. D. 5389. Bagatao Island Light (outer), N. 3° W., 14 miles (lat. 12° 35' 45" N., long. 123° 48' 18" E.), between Ticao Island and Luzon. March 12, 1909. Length 52 to 73 mm.

One example. D. 5247. Dumalag Island (S.), S. 78° W., 3.8 miles (lat. 7° 02' N., 125° 38' 45" E.), Gulf of Davao. In 135 fathoms. May 18, 1908. Length 57 mm.

One example. D. 5588. Mabul Island (S.) N. 81° E., 1.7 miles (lat. 4° 14' 20" N., long. 118° 36' 48" E.), Sibuko Bay Borneo and vicinity. In 11 fathoms. April 28, 1908.

11470. Kowloon, China. September 8, 1908. Length 145 mm. Scutes 32. A. II – I, 29 #1. Black marginal opercular spot small.

U. S. N. M., No. 5601. Philippines Bureau of Fisheries (3350). Length 164 mm, Ex Carany Isuura. Teeth on vomer in 2 patches.

Depth 3 1/3 to 3 3/5; head 3 to 3 1/8, width 2 to 2 1/3. Snout 1 3/4 to 1 7/8 in head; eye 6 to 6 1/8, 3 to 3 3/5 in snout; 1 1/3 to 1 7/8 in interorbital; maxillary reaches 3/4 to 4/5 in snout, expansion equals eye to 1/4 greater, length 2 1/4 to 2 2/3 in head; barbels reach ventral origin, length 1 1/10 to 1 1/8 in head; teeth uniserial in jaws, moderately large, conic; interorbital 3 1/5 to 4, convex. Gill rakers 7 + 24, lanceolate, equal gill filaments of 1 1/8 in eye.

Scales 26 to 28 in lateral line to caudal base and 2 or 3 more on latter; 2 or 3 above, 7 below, 12 predorsal forward to nostril; 3 rows below eye to lower preopercle edge. Tubes of lateral line with but

U. S. N. M., No. 56091. Luzon. Bureau of Fisheries (3350). Length 163.? mm. As Caranx kurra.

A. N. S. P., two examples. Philippines. Commercial Museum of Philadelphia. Length 152 to 173? mm. As Decapterus kurra.

Family Arripidae

Body elongate, fusiform, well compressed. Head moderate or small. Snout conic. Eyes lateral, advanced in head. Mouth cleft lateral, oblique. Teeth villiform or cardiform, in jaws and on palate. Preopercle denticulate. Gill openings large. Air bladder simple. Vertebrae 25, of which 15 caudal. Scales of moderate size. Lateral line complete. Dorsals continuous, with slender and rather feeble spines, similar in anal. Paired fins small, short, subequal, though ventrals thoracic.

Decapterus macrosoma Bleeker

Decapterus macrosoma Bleeker, Nat. Tijds. Ned. Indie, vol. 1, 1850 (1851), p. 358 (type locality, Batavia, Java); Verh. Batavia. Genoot. (Nakreel.), vol. 24, p. 87, 1852 (Batavia); Act. Nov. Sci. Ind. Neerl., vol. 1, no. 3, p. 9, 1856 (Macassar); Nat. Tijds. Ned. Indie, vol. 13, p. 372, 1857 (Yangi). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 197, 1931 (Bleeker's material). — Wakiya, Ann. Carnegie Mus., vol. 15, no. 1, p. 153, pl. 16, fig. 2, July 1, 1924 (Bonin Islands). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 535, Oct. 1927 (Natal). → — Fowler, Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (compiled).

cwe 129

4766

Pseudosciaena amblyceps Bleeker

Pseudosciaena amblyceps Bleeker, Nederland. Tijdschr. Dierk., vol. 1, 1863, p. 142. (Limoy); vol. 2, 1865, p. 56 (Limoy).

Corvina amblyceps Bleeker, Verslagen Akad. Wetensch. Amsterdam, series 4, vol. 4, 1870, p. 250 (China). 1/m Sauvage, Bull. Soc. Philomath. Paris, series 7, vol. 5, 1881, p. 106 (Swatow, China).

Sciaena ambyceps Steindachner, Denkschr. Akad. Wiss. Wien, Math.-Naturw. Klasse, vol. 57, pt. 1, 1892, p. 363 (Shanghai). 1/m Rutter, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 76 (compiled).

Sciaena crocea Richardson, Ichth. China Japan, 1846, p. 224. South of China, Canton. 1/m Ebra, Cat. Fauna Filipinas, vol. 1, 1895, p. 501 (Cavite; Luzon).

Pseudosciaena polyactis Bleeker, Verslagen Akad. Wetensch. Amsterdam, Proc. Verb.,

Decapterus macrosomus Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 63, 1906 (1907) (Bulan; Bacon). — Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 363, March 1925 (part).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 269 (Bulan example).

I do not accept the two designations of the alleged genotype by Bleeker as neither are contained in the original account of the genus. 13

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13 of note

Bleeker, Verhandel. Kon. Akad. Wetensch. Amsterdam (Kl. Natuurk.), vol. 14, 1874, p. 18. Type Atherinichthys macrophthalmus Bleeker, orthotypic.

Bleeker, Arch. Néerland. Sci. Nat. Haarlem, vol. 11, 1876, p. 329. Type Nciaena aquila Risso, orth ~~mono~~ typic.

1259

Caranx macrosoma Günther, Cat. Fish. Brit. Mus., vol. 2, p. 425, 1860 (copied).

Cav 130

1769

Genus Pseudosciaena Bleeker

Pseudosciaena Bleeker, Nederland. Tijdschr. dierk., vol. 1, 1863, p. 142. Type Pseudosciaena amblyceps Bleeker, designated by Jordan, Genera of Fishes, pt. 3, 1919, p. 321.

Atherinias Jordan and Thompson, Proc. U. S. Nat. Mus., vol. 39, 1911, p. 244. Type Sciaena manchurica Jordan and Thompson, orthogenic.

Head oblong, convex, with muciferous cavities. Mouth large, oblique. Opercle with simple point. Gill rakers 18 on lower branch of first arch. Soft dorsal, anal and caudal densely covered with small scales. V. Every dermal glandular organ on ventral surface, one below each scale. Dorsal spines 10, rays 27 to 33. Anal spines 2, rays 7 to 9.

Depth 5 1/4 to 5 3/5; head 3 2/3 to 3 3/4, width 2 to 2 1/4. Snout 2 7/8 to 3 in head from snout tip; eye 3 3/4 to 4, 1 1/5 to 1 1/4 in snout, greater than interorbital, broad adipose lids expose only median third of eye; maxillary reaches 4/5 to 7/8 to eye, expansion 1 3/4 to 2 in eye, length 2 4/5 to 2 7/8 in head from snout tip; interorbital 4 to 4 1/5, slightly convex to level. Gill rakers 10 + 28, lanceolate.

Scales 60 + 59 or 60 in lateral line, of which 30 keeled centers in straight section; lateral line with straight section 1 1/5 to 1 1/3 in arch; 14 scales above, 17 or 18 below.

D. VIII — I, 34 + 1, third spine $1\frac{7}{8}$ to $2\frac{1}{8}$ in total head length, first ray $2\frac{2}{5}$ to 3; A. II — I, 7, I, first ray 3 to $3\frac{1}{6}$; caudal forked; least depth of caudal peduncle $7\frac{1}{2}$ to $7\frac{3}{4}$; pectoral $1\frac{3}{5}$ to $1\frac{3}{4}$, rays II, 20; ventral rays I, 5, fin $2\frac{1}{4}$ to $2\frac{1}{3}$ in total head length.

Back brown, below silvery white. Iris white. Small dark gray to black spot on hind opercular edge above, less than pupil in size. Fins brown, lower paler.

Natal, East Indies, Philippines, China, Micronesia.

1262

U. S. Nat. Mus., No. 55997.

Philippines. Bureau of Fisheries (3521). Length 210mm. C. I, 27+1.
II–
1 =

South and West Australia, Queensland).

Waite, Records South Austral. Mus., vol. 2, no. 1, April 23, 1921, p. 116, fig. 178.

Mc Culloch, Fishes New South Wales, ed. 2, 1927, p. 66, pl. 28, fig. 238a. Whitley, Mem. Queensland Mus., vol. 10, pt. 1, Aug. 28, 1930, p. 17 (nomenclature).

Chaetodon constrictus Shaw, Zool. n. Holl., 1793, pl. 6; 1794, p. 17. Botany Bay district, New South Wales.

Enoplosus white Lacépède, Hist. nat. Poiss., vol. 4, 1802, pp. 540, 541 (on White 1790).

Enoplosus serotinus De Vis, Ann. Queensland Mus., no. 10, Nov. 1911, p. 28. (Cairns [wrong according to Waite as not known north of Wide Bay].

U. S. N. M., No. 56084.
Philippines. Bureau of Fisheries
(4146). Length 158 mm. Depth 5 1/8.

U. S. N. M., No. 94797. Hainan,
China. Lin. Length 132 mm.

? Upeneus filamentosus Macleay,
Proc. Linn. Soc. New South Wales,
vol. 8, 1883, p. 264. Wood Bay, New
Guinea.
? Pseudupeneus (Hobginia) filamentosus
Whitley, Proc. Linn. Soc. New South Wales,
vol. 54, pt. 2, 1829, p. 93, pl. 3 (type;
Antong Java, Lord Howe Group)
Upeneus taffordi Veale, Occas. Papers
Bishop Mus., vol. 1, no. 1, 1900 (1901), p.
71. Guam.
Pseudupeneus aurantiacus Veale, op.
cit., vol. 4, no. 1, 1906, p. 48, fig. 14.
Tubuai, Austral Islands.
Upeneus multifasciatus (not Quoy and Gaimard)
Fowler, Mem. Bishop Mus., vol. 10, 1928, p.
228, pl. 20B Proc. Acad. Nat. Sci. Philadelphia,
1929 (1930), p. 648 ("Pacific Ocean specimen").

Decapterus sanctae-helenae (Cuvier)

Caranx sanctae-helenae Cuvier, Hist. Nat. Poiss., vol. 9, p. 37, 1833 (type locality, Saint Helena, South Atlantic).

— Günther, Journ. Mus. Godeffroy, vol. 5, pt. 11, p. 130, 1876 (Tahiti; Hawaii; Raiatea; Bonin Islands; Paumotus).

4475

Body elongated, partly ovoid to elliptoid, more or less compressed. Snout obtusely rounded, sometimes overhangs lower jaw, often with conspicuous slits and pores. Eyes moderate. Mouth moderate or small, inclined or oblique. Chin with pores, rarely with small rudimentary barbel at symphysis. Teeth villiform; outer premaxillary row enlarged, sometimes inner mandibular row enlarged; no distinct canines. Interorbital rather wide, slightly convex. Gill rakers rather few, short. Pseudobranchiae present. Air bladder present. Pyloric coeca few or in moderate number. Scales ctenoid or cycloid, extend

Decapterus sanctae-helenae Schmeltz, Cat. Mus. Godeffroy, No. 6, p. 14, 1877 (Raiatea); No. 7, p. 45, 1879 (Tahiti).

— Steindachner, Denks. Akad. Wiss. Wien, math. naturw. Kl., vol. 70, p. 495, 1901. (Honolulu).

— Kendall and Radcliffe, Mem. Mus. Comp. Zool., vol. 35, p. 97, 1912 (Easter Island).

Pseudmyxterus maccullochi Ogilby
= Neirena (Corvina) novae hollandiae
Steindachner, monotypic.

Nibea Jordan and Thompson, Proc. U.
S. Nat. Mus., vol. 39, 1911, pp. 244, 246.
Type Pseudotolithus mitsukurii Jordan
and Snyder, designated by Jordan, Genera
of Fishes, pt. 4, 1920, p. 539.

Pinnicorvina Fowler, Amer. Museum
Novitates, N. Y., No. 162, March 31, 1925, p. 4.
Type Rhinoscion epipercus Bleeker,
orthotypic.

Pennahia Fowler, Journ. Bombay Nat.
Hist. Soc., Vol. 30, No. 4, November 1926,
p. 776
Type Johnius argenteus Bloch,
orthotypic.

— Fowler, Occas. Pap. Bishop Mus., vol. 8, no. 7, p. 378, 1923 (Honolulu); Bull. Bishop Mus., no. 22, p. 25, 1925 (Honolulu); Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 213 (Lelagoa Bay). — Fowler and Ball, Bull. Bishop Mus., no. 26, p. 12, 1925 (Lisianshy; Johnston Island).

— Fowler, Mem. Bishop Mus., vol. 10, p. 143, fl. 11 B., 1928 (~~Oho~~ Oahu; type of Decapterus cannoides; Honolulu; Easter Island; Lisianshy; Johnston Island; Society Islands); — Pietschmann, Bull. Bishop Mus., no. 73, p. 9, 1930 (Guam).

fasciatum Tschudi, monotypic.

Apeches Gistel, naturgesch. Thierr., 1848, p. (SC IX.) Type Johnius carutta Bloch, virtually, as Apeches Gistel proposed to replace Johnius Bloch.

Melantha Gistel, ~~Proc. Acad. Nat. Sci. Philadelphia, 86~~ Naturgesch. Thierr., 1848, p. 109. Type Melantha nigra Gistel = Sciaena umbra Linnæus, monotypic.

Rhinoscion Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 85. Type Amblodon saturnus Girard, orthotypic.

Callaus (Jordan) Jordan and Eigenmann, Rep. U. S. Fish Comm., pt. 14, 1888 (1889), pp. 395, 401, 406. Type Corvina deliciosa Tschudi, orthotypic.

Pseudomycterus Dyilby, Proc. Royal Soc. Queensland, vol. 21, 1908, p. 94. Type

— Fowler, Mem. Bishop Mus., vol. 11, no. 5, p. 326, 1931 (Honolulu); — Herre, Pan Pac. Journ., Research Inst., vol. 7, no. 1, p. 4, January - March 1932 (Tahiti).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, 1934, p. 443 (Durban, Natal); Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (New Hebrides; Fumafuti; Hawaii).

Genus Johnius Bloch Carr 130

Johnius Bloch, Naturgesch. Ausland. Fische, pt. 7, 1793, p. 132. Type Johnius carutta Bloch, designated by Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 85.

Corvina Cuvier, Règne Animal, ed. 2, vol. 2, 1829, p. 173. Type Corvina nigra Cuvier = Sciaena umbra Linnaeus, designated by Gill, op. cit. Proc. Acad. Nat Sci. Philadelphia 1861, p. 85

Argyrosomus La Pylaie, Congrs. Sci. France, Poitiers (Recherches en France, Poiss.), 1834 (1835), p. 534. Type Argyrosomus procerus La Pylaie = Labrus hololepidotus Lacépède, monotypic.

Cheilotrema Tschudi, Fauna Peruana, Fishes, 1845, p. 13. Type Cheilotrema

Caranx pinnulatus Eydoux and Souleyet, Voy. Bonite, Zool., vol. 1, p. 165, pl. 3, fig. 1, 1841 (type locality, Hawaiian Islands). — Pöhl, Cat. Mus. Godeffroy, No. 10, p. 31, 1884 (Tahiti).

Decapterus pinnulatus Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 186, 1903 (1905) (Honolulu). — Jordan and Snyder, Bull. Bur. Fisher., vol. 26, p. 210, 1906 (1907) (Honolulu). — Jordan and Jordan, Mem. Carnegie Mus., vol. 10, No. 1, p. 37, december 1922 (Honolulu).

Type of Veiaena manchurica.

85773 U.S.N.M. China. A. de C. Fowerby. Length 99 to 128 mm. 4 examples. These evidently in formaline, have the silvery photophore-like spots on the ventral surface of the trunk and tail as in Collichthys lucidus, these showing through the scales and in 12 transverse series across the belly but as they narrow posteriorly only 4 rows across above the anal base.

86661 U.S.N.M. Nanking, China. C. Ping. Length 315 mm. Silvery or gray photophore like spots showing through the scale rows all along the back and upper sides.

6856 Bureau of Fisheries. Kowloon. October 22, 1909. Length 200 mm.

1269

Decapterus macarellus pinnulatus
Nichols, Amer. Mus. Novitates, N. Y.,
No. 94, p. 3, October 19, 1923 (Mangareva).

not conspicuous. Iris silvery white. Dorsals and caudal brown, dusted with little darker terminally. Lower fins whitish.

China, Japan. Reported from Cavite and Luzon by Elera, though otherwise not known from the Philippines. None of my examples show the dark spot on the opercle as in Jordan and Thompson's figure, certainly greatly accentuated as compared with the type. Sciaena divara, based on a specimen 235 mm. measured to caudal base, seems to be synonymous.

62378 U.S.N.M. Port Arthur, Manchuria.
J. F. Abbott. Length 203 to 244 mm.
7 examples. As Corvula argentata. Some show median caudal rays extended as points, so fin almost long as head.

67330 U.S.N.M. Port Arthur.
Jordan and Snyder. Length 290 mm.

Caranx muro-adsi Schlegel, Fauna Japonica, Poiss., pts. 5–6, p. 108, 1844 (type locality, "baies près de Nagasaki").

Caranx muroadsi Schlegel, Fauna Japonica, Poiss., pts. 5–6, pl. 58, fig. 1, 1844. — Richardson, Ichth. China and Japan, p. 274, 1846 (coasts of China). — Bleeker, Verh. Batavia. Genoot. (Nat. Ichth. Japan), vol. 25, p. 14, 1853 (reference); (Nat. Ichth. Japan), vol. 26, pp. 5, 101, 1857 (Nagasaki); Act. Soc. Sci. Ind. Neerl., vol. 3, no. 3, p. 6, 1857–58 (Japan). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 428, 1860 (note). — Kner & Reise Novara, Fische, p. 151, 1865 (Nicobars).

filaments or 1½ in eye.

Scales 51 to 55 in lateral line to caudal base and 32 or 33 more out over caudal fin; 6 above, 8 or 9 below; 27 to 35 predorsal, of which 13 to 17 to occiput; 11 rows across cheek; soft vertical fins and ventrals finely scaled. Scales with 20 basal radiating striae; 29 to 30 small apical denticles, with 3 to 9 transverse series of basal elements; circuli moderately fine.

D. IX, I, 32, I or 33, I, fourth spine 2⅕ to 2⅖ in total head length, first ray 3 to 3⅞; A. II, 10, I or 9, I, second spine 6 to 7½, first ray 2 to 3; caudal 1⅕ to 1½, cuneate; least depth of caudal peduncle 3⅗ to 3¾; pectoral 1⅛ to 1⅓; ventral 1⅓ to 1⅖.

Back brown, sides and belly silvery white. A lightly gray tinge on opercle,

Decapterus muroadsi Bleeker, Ned. Tijds. Dierk., vol. 4, 1873 (1874), p. 131 (reference). — Waite, Mem. Austral. Mus., vol. 3, p. 189, 1897 (Funafuti, Ellice Islands). — Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 67, 1901 (reference). — Kishinouye, Journ. College Agric. Tokio, vol. 2, p. 385, 1911 (Hahajima, Bonin Islands). — Wakiya, Ann. Carnegie Mus., vol. 15, p. 152, pl. 16, fig. 1, 1924 (Tokyo Bay; Kii; Kagoshima; Hiwajima; Hamada). — Schmida, Philippine Journ. Sci., vol. 46, no. 3, p. 359, march 1925 (copied). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 605, 1929 (Hong Kong); vol. 86, 1934, p. 443 (Durban and Umhlali rock pools, Natal; also Delagoa Bay materials). — Izuka and Matsumura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 158, 1920 (Tokushima, Awa).

depth 3 1/5 to 3 4/5; head 3 to 3 2/5, width 2 1/8 to 2 3/5. Snout 4 to 5 in head from snout tip; eye 3 3/5 to 5, greater than snout in young to 1 to 1 1/3 in head, 1 1/5 to 1 2/4 in interorbital; maxillary reaches 4/5 or to opposite hind eye edge, expansion 1 1/5 to 1 3/4 in eye, length 2 to 2 1/10 in head from snout tip; mouth terminal, lower jaw slightly protruding; chin with pair of pores; upper teeth with narrow villiform band and outer row of curved canines exposed with closed mouth; lower teeth as single row of well spaced canines and small intervening teeth; interorbital 3 1/4 to 3 3/5, broadly convex; preopercle edge little distinct, only few weak spinules along lower edge; preorbital width from eye to maxillary 1/2 of eye. Gill rakers 11+18, lanceolate, little greater than gill

Caranx marmadsi Elera, Cat. Fauna Filipinas, vol. 1, p. 509, 1895 (Manila; Luzon).

Decapterus canonoides Jenkins, Bull. U. S. Fish Comm., vol. 22, p. 442, pl. 4, 1902 (1904) (type locality, Honolulu).— Jordan, Evermann, Tanaka, Proc. Cal. Acad. Sci., vol. 16, ser. 4, p. 655, November 14, 1927 (Honolulu).

vol. 24, November 1877; Verhandel. Akad. Wetensch. Amsterdam, vol. 18, 1879, p. 5, pl. 1, fig. 1. Shanghai, China. 1/2 Jordan and Veale, Proc. U. S. Nat. Mus., vol. 29, 1906, p. 542 (probably Shanghai).

Pseudoxiaena undorittatus Jordan and Veale, Proc. Davenport Acad. Sci., vol. 10, 1905, p. 11, pl. 6. Hong Kong.

Othonias undorittatus Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, June 27, 1925, p. 244 (type and paratypes of Sciaena manchurica; Osaka).

Corvula argentata (not Houttuyn) Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, 1906, p. 518 (Port Arthur, Manchuria).

Sciaena manchurica Jordan and Thompson, Proc. U. S. Nat. Mus., vol. 39, 1911, p. 255, fig. 3. Port Arthur, Manchuria. 1/2A Jordan and Metz, Mem. Carnegie Mus., vol. 6, 1913, p. 38, fig. 28 (copied).

Depth 4 1/2 to 5; head 3 1/2 to 3 4/5, width 1 7/8 to 2 1/3. Snout 2 7/8 to 3 1/8 in head from snout tip; eye 3 1/2 to 4 1/4, 1 1/8 to 1 1/2 in snout, greater than interorbital, broad adipose lids expose median third; maxillary reaches 4/5 to 7/8 to eye, expansion 1 2/5 to 2 in eye, length 2 1/3 to 3 in head from snout tip; row of minute teeth in each jaw, little patch above each side anteriorly and triangular patch on vomer; interorbital 3 2/5 to 3 3/4, broadly convex. Gill rakers 11 + 28, lanceolate, 1 1/2 in gill filaments or 1 1/3 in eye.

Scales 50 to 52 + 33 to 46 in lateral line, of which 30 to 35

keeled scutes with depth $1\frac{1}{2}$ in eye; straight section of lateral line $1\frac{1}{5}$ to $1\frac{1}{4}$ in arch; 12 to 15 scales above lateral line, 18 to 20 below. Breast scaled. Scales with 23 to 25 complete circuli.

D. VIII — I, 30+1 or I, 31+1, third spine $1\frac{2}{3}$ to $1\frac{7}{8}$ in total head length, first ray $2\frac{1}{2}$ to $2\frac{3}{5}$; A. II — I, 26+1 or I, 27+1, first ray $2\frac{4}{5}$ to $3\frac{1}{10}$; caudal $1\frac{1}{2}$ to $1\frac{3}{5}$, forked; least depth of caudal peduncle $6\frac{2}{3}$ to 8; pectoral $1\frac{1}{8}$ to $1\frac{1}{4}$, rays III, 22; ventral rays I, 5, fin $2\frac{1}{8}$ to $2\frac{1}{5}$ in total head length.

Back olive brown, below white. Black spot, less than pupil in size, on opercular

edge. Ends of jaws brownish. Traces of median yellow lateral streak from head to caudal. Dorsals and caudal grayish, other fins pale, end of soft dorsal dusted with dark gray.

Natal, China, Japan, Micronesia, Polynesia, Hawaii. Wakiya's figure of Decapterus muroadsi shows: depth $5\frac{1}{2}$ in total; head $4\frac{3}{4}$; pectoral $5\frac{3}{5}$; eye $3\frac{1}{5}$ in head. He gives dorsal 26 to 28 and anal 31 to 33. All these details are in the range of variation. "The lateral line marked with a series of black spots" appears to be the only distinguishing character for Decapterus

muroadsi, though this is
not conclusive.

U. S. N. M., one example (with No. 72605). Japan. Government of Japan. Length 195 mm. As Caranx muroadsi.

U. S. N. M., No. 44895. Japan. Government of Japan. Length 315 to 333 mm. Three examples. As Caranx maru-adsi.

A. N. S. P., one example. Delagoa Bay. 1922. H. W. Bell Marley. Length 145 mm.

Homodon Bamerville, Rev. Zool., 1847, p. 133. Type Centropristes georgianus Valenciennes, monotypic.

Body oblong or ellipsoid, deepest at spinous dorsal. Head pointed, compressed. Snout moderate. Eyes moderate or small. Maxillary small. Mandible protruding. Jaws with broad band of fine teeth, narrowing laterally, patch on vomer and band on each palatine, tongue smooth. Two nostrils, close together, each side of snout. Opercle with 2 short spines. Branchiostegals 7. Pyloric coeca 17 to 75. Scales minutely

Decapterus lajang Bleeker

Decapterus lajang Bleeker, Nat. Tijdk. Ned. Indie, vol. 8, p. (296) 302, 1855 (type locality, Ternate); Act. Soc. Sci. Ind. Neerl., vol. 1, no. 5, p. 6, 1856 (Amboina); vol. 2, no. 7, p. 5, 1857 (Amboina). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 425, 1860 (note).

— Wakuja, Ann. Carnegie Mus., vol. 15, no. 1, p. 155, pl. 17, fig. 1, 1924 (Tokyo Bay; Kii; Etwajima; Kagoshima; Bonin Islands). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 535, Oct. 1927 (Simon's Bay in False Bay). (— Herre, Hong Kong Nat. Suppl., no. 3, p. 29, February 1934 (Hong Kong). — Fowler, Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (compiled). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 200, 1931 (compiled).)

Sciaena diacanthus Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 290 (China, Bay of Bengal, Malayan Peninsula, Calcutta). 1/2 Day, Proc. Zool. Soc. London, 1865, 18 (Cochin, Malabar); Fishes of India, pt. 2, 1876, p. 189 (Hoogly high as Calcutta). 1/2 Karoli, Termesz. Füzetek, Budapest, vol. 5, 1881, p. 189 (Singapore). 1/2 Day, Fauna British India, vol. 2, 1889, p. 118. 1/2 Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 501 (Manila, Luzon). 1/2 Dunker, Mitteil. Naturh. Mus. Hamburg, vol. 21, 1903 (1904), p. 154 (Kuala Selangor). 1/2 Seale, Philippine Journ. Sci., vol. 9, No. 1, 1914, p. 68 (Hong Kong).

> Pseudosciaena diacanthus Bleeker, Verhandel. Kon. Akad. Wetensch. Amsterdam, vol. 14, series 3, 1874, p. 27 (Singapore, Pinang, Banka, Java, Madura); Atlas Ichth. Ind. Néerland., vol. 9, 1877, pl. (5) 386, fig. 2. 1/2 Seale, Philippine Journ. Sci., vol. 5, No. 4, Oct. 1910, p. 279 (= Sandakan, Borneo).

1279

Depth 5 1/3; head 4. Snout 2 3/4 to 3 in head; eye 4 3/4, 1 3/4 in snout; maxillary reaches 3/4 in snout, length of 2 2/3 in head; upper teeth obsolete, lower uniserial, vomerine in transverse strip at front end, in longitudinal strip in middle, palatines toothed; tongue with median longitudinal band of teeth; interorbital rather low.

Lateral line with low long arch, posterior straight section 1 1/3 in arch, posterior 1/3 with 28 scutes, their depth half of eye.

D. VIII — I, 34 or 35 ± 1, third spine 2 1/10 in total head, first branched ray 2 1/2; A. II — I, 28 + 1 to I, 30 + 1, first branched ray 2 4/5, caudal 1 1/2, deeply emarginate; least depth of caudal peduncle 8; pectoral 1 2/3; ventral 2 3/4.

dark blue brown above, light below. In life greenish blue above, silvery below, without longitudinal band. Opercular spot black, about size of pupil, distinct. Dorsals and caudal brown. Pectoral gray. Anal and ventral light. Length 260 mm without caudal. (Wakiya.)

South Africa, East Indies, China, Japan, Micronesia.

Decapterus maru-adsi (Schlegel)

Caranx maru-adsi Schlegel, Fauna Japonica, Poiss., pts. 5-6, p. 109, 1844 (type locality, Japan).

Caranx maruadsi Schlegel, Fauna Japonica, Poiss., pts. 5-6, pl. 58, fig. 2. — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 428, 1860 (China). — Bleeker, Ned. Tijds. dierk., vol. 2, p. 56, 1865 (Amoy); Verslag. Akad. Wet. Amsterdam, ser. 2, vol. 4, F. — Martens, Preuss. Exped. Ost Asien, vol. 1, p. 390, 1876 (Formosa Straits; Manila) 252, 1870 (China). — Peters, Monatsb. Akad. Wiss. Berlin, 1880, p. 922 (Ningpo). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. ~~390~~ 160, 1881 (Canton). — Sauvage, Bull. Soc. Philom. Paris, ser. 7, vol. 5, p. 106, 1881 (Swatow).

dorsal and anal membranes scaleless.

D. XI, 22, fourth spine 2 3/4 in head, first ray 2 3/5; D. II, 7, second spine 3 2/3, 2 in postocular, second ray 2, or 2 1/2 in head; caudal 1 1/2, cuneate; least depth of caudal peduncle 3 4/5; pectoral 1 2/3; ventral 2.

Dark brown, slightly paler below. Slightly darker parallel streaks obliquely up and back, formed by punctulations on center of each scale. Darker spots dispersed rather sparsely on soft dorsal, much fewer below lateral line and on head. Mouth white, dusky in pharynx. Dorsals light dusky. Anal and paired fins blackish brown. Caudal paler and indistinctly spotted on upper half, lower much darker. Length 358 mm. (Tanaka, Nagasaki, Japan.

1282

Decapterus maruadsi Bleeker, Verh. Batavia. Genoot. (Nat. Sch. Japan), vol. 25, p. 14, 1853 (reference); (Nat. Sch. Japan), vol. 26, pp. 5, 100, 1857 (Nagasaki); Act. Soc. Sci. Ind. Neerl., vol. 3, No. 3, p. 6, 1857-58 (Japan); Ned. Tydsr. Dierk., vol. 4, p. 131, 1873 (1874) (reference). — Rutter, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 72 (reference).

Carc 29

Johnius diacanthus (Lacépède)

Lutjanus diacanthus Lacépède, Hist. hat. Poiss., vol. 4, 1802, pp. 195, 240. "la collection hollandoise cédée à la France."
(no locality.)

Johnius diacanthus Cantor, Journ. Asiat. Soc. Bengal, vol. 18, pt. 2, 1849, p. 1049 (Pinang, Malay Peninsula, Singapore).

1/m Mason, Burmah Nat. Resources, 1860, p. 695. 1/m Kner, Reise Novara, Fische, 1865, p. 133 (Madras and 50 miles off Ceylon).

1/m Fowler, Journ. Bombay Nat. Hist. Soc., vol. 30, no. 4, November 1926, p. 777 (Bombay); vol. 33, no. 1, 1928, p. 115 (Bombay); Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 576 (Shanghai), p. 611 (Hong Kong).

— Veno, Rep. Fisher. Indust. Formosa, pl. 8, fig. 3, 1910. — Jordan, Tanaka, Snyder, Journ. College Sci. Tokio, vol. 33, p. 128, 1913 (reference).

— Iwasaya, Linn. Carnegie Mus., vol. 15, p. 156, pl. 17, fig. 2, July 1, 1924 (Tokyo Bay; Kii; Iwajima; Hanada). — Nichols, Limer. Mus. Novit. N. Y., No. 50, p. 2, October 24, 1922 (Hawaiian Islands). — Jordan and Jordan, Mem. Carnegie Mus., vol. 10, No. 1, p. 38, December 1922 (Honolulu).

→ — Ochima, Philippine Journ. Sci., vol. 26, No. 3, p. 362, March 1925 (Taihoku, Formosa).

Case 13

Johnius yama (Tanaka)

Vicina yama Tanaka, Zool. Magazine, Tokyo, vol. 27, 1915, p. 665. Nagasaki; Fishes of Japan, vol. 22, 1916, p. 372, pl. 107, fig. 327 (Nagasaki).

Depth 3 1/3; head 3. Snout 3 2/3 in head; eye little less than 7; maxillary nearly 2 inches 1/2 in eye, expansion nearly equals eye, length 2 3/8 in head; lower jaw little shorter than upper; rather wide band of villiform teeth in jaws, upper band wider; upper outer row of large teeth, lower inner row little enlarged; preopercle with feeble serrae. Gill rakers 5 + 7, besides rudiments, longest 4 in eye.

Scales 78 in vertical and 57 oblique rows along above lateral line, 1 to caudal base; 5 1/2 pores in lateral line to caudal base; 9 scales above, 13 below; caudal scaled basally;

— Fowler, Mem. Bishop Mus., vol. 10, p. 143, 1928 (compiled).

Decapterus maru-adsi Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 140, 1935 (Bangkok).

V.[2] Dorsal rays 26 to 31.

W.[1] Black axillary blotch; fins gray or pale. hololepidota.

W.[2] No black axillary blotch.

X.[1] Fins yellow or orange.

Y.[1] No blue opercular blotch. plagiostomus.

Y.[2] Opercle with blue blotch. ophiceps.

X.[2] Fins gray or blackish.

Z.[1] Blackish band along each scale row; head glossed purple; fins deep black. semicinctosus.

Z.[2] No dark body bands; first dorsal black, vertical fins dark terminally. castor.

a.[3] Tubular scales 75 to 80 in lateral line. trachycephalus.

a.[4] Tubular scales 90 in lateral line. microlepis.

Case 13 name only

1285

Decapterus fasciatus Bleeker,
Nat. Tijds. Dierk., vol. 4, 1874, pp.
116, 151 (type locality, China), pl.
131 (reference).

f.[3] Inner row of mandibular teeth, at least distinctly larger than others.

m.[1] Payed fins pale.

m.[2] Lower gill rakers 12 or 13.

a.[1] Caudal peduncle moderately deep.

o.[1] Spinous dorsal black, base white and black blotch at base of each dorsal ray. albiflora.

p.[2] Spinous dorsal gray.

q.[1] Eye 4 to 4 2/3. australis.

q.[2] Eye 4 7/8 to 5 1/4. goldmanni.

p.[2] Caudal peduncle slender; eye 9; dorsal membranes deeper brownish terminally. polyskadiskos.

m.[2] Lower gill rakers 14 to 18 (rarely low as 9 in tuna).

r.[1] Drab gray above, below white, second anal spine weak. tuna.

r.[2] Dark streaks follow oblique

Caranx kurra (not Valenciennes) Day, "Fishes of India", pt. 2, p. 214, pl. 48, fig. 5, 1876 (Madras).

Decapterus russelli (not Rüppell) Steindachner and Döderlein, Denks. Akad. Wiss. Wien, math. naturw. Kl., vol. 49, p. , pl. 4, fig. 2, 1884 ( ).—Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 67, 1901 (reference).—Jordan and Seale, Proc. Davenport Acad. Sci., vol. 10, p. 6, May 22, 1905 (Hong Kong).

Decapterus macrosoma (not Bleeker) Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 337 (Formosa).

Decapterus dayi Wakiya, Ann. Carnegie Mus., vol. 15, p. 158, pl. 18, fig. 1, 1924 (type locality, Formosa).

scale rows above lateral line,

horizontal rows below;

second anal spine strong, cujus
i.[2] [m.][3] caudad, anal and paired fins blackish brown.
depth 3 1/2 to 4. bleekeri.

s.' No dark axillary blotch.

t.' Lower gill rakers 13.

soldado.

t.' Lower gill rakers 14 or
15. argentatus.

s.[2] Dark axillary blotch;
spinous dorsal black terminally.
axillaris.

b.[3] Dorsal rays 30 to 33; caudal with dark
blotch.

u.' Dorsal dusted gray.
hypostomus.

u.[2] Dorsal nearly black.
dussumieri.

a.[2] Tubular scales 55 to 60 in lateral line.

v.' Dorsal rays 22 to 25.
jubatus.

Cast 3 rarely only

Depth 4 1/4 to 4 1/2; head 3 1/2 to 3 7/8, width 2. Snout 3 to 3 1/5 in head from snout tip; eye 3 1/5 to 4 2/5, 1 to 1 1/3 in snout, 1 to 1 1/5 in interorbital, adipose lids broad and expose only median third of eye; maxillary reaches 7/8 or to eye, expansion 2 to 2 1/3 in eye, length 2 1/2 to 2 7/8 in head from snout tip; interorbital 3 1/5 to 3 2/5, broadly convex. Gill rakers 13 + 35, lanceolate, 1 1/8 in gill filaments, 1 1/3 in eye. Scales 39 to 47 + 32 to 37 in lateral line, straight section 1 1/5 to 1 1/4 in arch; 13 to 17 scales above arch, 15 to 19 below.

D. VIII — I, 28 + 1 to I, 33 + 1, fourth spine 1 7/8 to 2 in total

head length, first branched ray $1\frac{7}{8}$ to $2\frac{1}{4}$; A. II-I, 23+1 to I, 30+1, first branched ray $2\frac{1}{3}$ to $2\frac{2}{3}$; caudal $1\frac{1}{2}$ to $1\frac{3}{5}$, deeply forked; least depth of caudal peduncle $5\frac{1}{2}$ to $7\frac{1}{2}$; pectoral 1 to $1\frac{1}{10}$, rays II, 19; ventral rays I, 5, fin 2 to $2\frac{1}{6}$ in total head length.

Back brown or drab to dull olive, sides and below white with silvery tinge. Iris white. Large blackish blotch about size of pupil or little larger, also partly on shoulder girdle. Spinous dorsal membranes dark to dusky brown, soft dorsal and caudal grayish, also pectoral, other fins whitish.

China, Japan, Hawaii. Known chiefly by its large pectoral, large black opercular blotch and conspicuous scutes. Decapterus dayi Wakiya appears closely related and is doubtless synonymous.

U. S. N. M., No. 22589. Japan. Japanese Government. Length 172 mm.

U. S. N. M., No. 22605. Japan. Japanese Government. Length 250 mm.

Three examples. D. 5389.
Bagatao Island Light (outer),
N. 3° W., 14 miles (lat. 12° 35' 45"
N., long. 123° 48' 18" E.), between
Ticao Island and Luzon.
In 109–80 fathoms. May 12, 1909.
Length 59 to 65 mm. Resembles
Wakuja's figures except opercular
spot not distinct and pectoral
much shorter.

18742. Pratas Reef. October 25, 1908.
Length 161 mm.

22288. River at Port Dupan, Leyte.
March 17, 1909. Length 142 mm.

7688. Ulugan Bay, Palawan. December
28, 1908. Length 270 mm.

20116 and
20124. Ulugan Bay near Bakeli River
mouth. December 28, 1908. Length 68 to 78 mm.

1 example. Varadero Bay, Mindoro.
July 23, 1908. Length 46 mm.

22376. Amboina Market, Amboina,
Dutch East Indies. December 7, 1907. Length
129 mm.

30502 U.S.N.M. New Guinea.
Australian Museum. Length 270 mm.

52434 U.S.N.M. Apia, Samoa.
Bureau of Fisheries. Length 5 to 310 mm.
3 examples. Ex Upeneus malabaricus.

56043 U.S.N.M. Bacon. Bureau of
Fisheries (No. 3615). Length 165 mm.

Decapterus kurroides Bleeker

Decapterus kurroides Bleeker, Nat. Tijds. Ned. Indië, vol. 8, p. (393) 420, 1855 (type locality, Amboina); Act. Soc. Sci. Ind. Neerl., vol. 1, no. 5, p. 6, 1856 (Amboina).
— Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 361, March 1925 (Toku, Formosa).

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 199, 1931 (note; compiled).

Johnius cataleus Cuvier, Règne Animal, ed. 2, vol. 2, 1829, p. 173 (on Katchekee Russell, Fishes of Coromandel, vol. 2, 1803, p. 12, pl. 116. Vizagapatam). 1/m Valenciennes, Règne Animal, Cuvier, Ed. Ill., 1839, p. 81.

Corvina cataleia Cuvier, Hist. Nat. Poiss., vol. 5, 1830, p. 178. Pondichery; Malabar. 1/2m Valenciennes, Voyage Ind. Orient. ~~Zool~~ Bélanger, Zool., 1834, p. 360 (Malabar; Pondichery). 1/2n Richardson, Ichth. China Japan, 1846, p. 226 (China Sea; Canton).

Depth 5 2/3; head 4 1/2. Snout subequal with eye; eye 3 1/2 in head; maxillary reaches below front eye edge; 2 1/2 in head; teeth in jaws uniserial, small, visible to naked eye; vomerine, palatine and lingual teeth minute, on vomer in ↑-shaped band, on palatines on both sides in slender band, lingual in middle of base of tongue in slender band, about twice shorter than tongue.

Scales small, conspicuous. Pectoral triangles scaley on sides and below. Lateral line arched till slightly before middle of soft dorsal, curvature weak, posteriorly with about 30 armed scutes, deepest 4 times in body depth.

D. I, VIII – I, 29 + 1, third spine 1 1/2 in body depth, soft fin length

3 1/4 in body length; A. II – I, 23+1, front spine longer than posterior, soft fin slightly lower than soft dorsal, 4 1/2 in body length, longer than head; pectoral rays II, 19; ventral I, 5, length 8 in body; caudal 6, deeply emarginate.

Green above, silvery below. Snout brown anteriorly. Opercle above and posteriorly, and axilla, with black spot. Fins yellowish or violaceous hyaline. Length 173 mm. (Weber and Beaufort.)

East Indies, Formosa.

Genus Trachurus Rafinesque

Trachurus Rafinesque, Indice Itt. Sicil., p. 20, 1810. (Type Scomber trachurus Linnaeus, tautotypic.)

CM 129

Atolithes versicolor Cuvier

Atolithus versicolor Cuvier, Règne Animal, ed. 2, vol. 2, 1829, p. 173. (on Potee kumasah Russell, Fishes of Coromandel, vol. 2, 1803, p. 7, pl. 109, Vizagapatam); Hist. Nat. Poiss., vol. 5, 1830, p. 64 (copied). 1/2m Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, 1849, p. 1045 (Pinang).

Atolithus lateoides Bleeker, Naturk. Tijdschr. Nederland.-Indië, vol. 1, 1850, p. 98. Batavia. 1/2m Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 311 (compiled). 1/2m Bleeker, Verhandel. Kon. Akad. Wetensch. Amsterdam, no. 3, vol. 14, 1874, p. 7 (Pinang; Java); Atlas Ichth., vol. 9, 1877, pl. (1) 384, fig. 1. 1/2m Vinciguerra, Ann. Mus. Civ. Stor. Nat. Genova, ser. 3, vol. 10, 1926, p. 582 (Nabrawala).

Atolithus dolorosus Herre, Philippine Journ. Sci., vol. 5, 1910 (1911), p. 280, pl. 3. Kandakan, Borneo.

Body elongate, fusiform, somewhat compressed. Head moderate, compressed. Snout conic. Eye moderate, slightly advanced from middle of head, nearly midway in young. Rather broad adipose lids develop with age. Mouth moderate, mandible protruding. Maxillary reaches eye, expanded behind. Teeth minute, mostly uniserial in jaws, on vomer, palatines and tongue. Lower gill rakers slender, 35 to 40. Pseudobranchiae present. Air bladder forked posteriorly. Pyloric appendages numerous. Scales small, present on breast Lateral line furnished entire extent with bony plates, larger and spinous in straight section

-or along sides of caudal peduncle.
Anterior accessory dorsal branch
joins lateral line, unarmed.
Two dorsals, first with
procumbent spine. Two strong
spines before anal, connected
by membrane. No finlets.

Species few, living in
warm seas. distinguished from
all other members of the family
by the lateral line armed with
deep scutes its entire length or
in both sections.

Analysis of Species

a.[1] Head longer than depth; deepest scutes on arch of lateral line not higher than those of straight section; scutes 70 to 72. trachurus.

a.[2] Head equals depth; deepest scutes on arch of lateral line somewhat higher than those of straight section; scutes 75 or 76. declivis.

1 example. Tr. 70. Tahiti Island, north of Celebes. November 9, 1909. Length 44 mm. Golden stripes on pearly grounds, somewhat olivaceous above. Fins vermilion.

Trachurus trachurus (Linnaeus)

Scomber trachurus Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 298, 1758 (type locality, Mediterranean Sea); ed. 12, pt. 1, p. 494, 1766 (copied). — Houttuyn, Verh. Holl. Maatsch. Haarlem, vol. 20, p. 332, 1782 (Japan). — Bonnaterre, Tabl. Ichth., p. 140, pl. 58, fig. 230, 1788 (Atlantic; Mediterranean). — Gmelin, Syst. Nat. Linn., pt. 1, p. 1335, 1789 (Pacific Ocean). — Walbaum, Artedi Pisc., vol. 3, p. 211, 1792 (copied). — Schneider, Syst. Ichth. Bloch, p. 27, 1801 (mari Mediterraneo, Indico, Oceano Sept. et Pacifico).

c.[1] depth 3 2/3 to 4 1/5; gill rakers 5+8(12); scales 63 to 66(70) along above lateral line to caudal base. argenteus.

c.[2] depth 3 1/5 to 3 1/3; gill rakers 9+16; scales 57 to 62(60) along above lateral line to caudal base rubens.

u.[2]. Pterotolithus, new subgenus. Anal with 10 to 12 branched rays; body, soft dorsal and caudal with dark blotches. Cynoscion nannus maculatus.

Subgenus Otolithes Aiken

Anal with 7 or 8 branched rays. Coloration uniform, without large dark blotches.

Trachurus trachurus Günther, Cat. Fish. Brit. Mus., vol. 2, p. 419, 1860 (Cape of Good Hope); Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 24, 1880 (Valparaiso), p. 26 (Yokohama).

— Steindachner, Denks. Akad. Wiss. Wien, Math.-naturw. Kl., vol. 71, p. 142, 1907 (Gischin). — Regan, Ann. Natal Mus., vol. 23, p. 548, 1901 (Yokohama). — Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, p. 748, 1901 (Yokohama). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 28, p. 203, 1905 (Gensan, Korea). Mus., vol. 1, pt. 3, p. 246, May 15, 1908 (Bird Island). — Veale, Philippine Journ. Sci., vol. 10, p. 63, 1914 (Hong Kong).

— Martens, Preuss. Exped. Ost Asien, vol. 1, p. 390, 1876 (Yokohama).

— Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, p. 388, May 21, 1917 (reference).

— Oshima, Philippine Journ. Sci., vol. 26, No. 3, p. 367, March 1925 (Tamsui River near Taihoku, Formosa).

14238 [1107]. Mariveles wharf, Manila Bay, Luzon. January 30, 1909. Length 124 mm. General color dusky red, fading to pearly. Dusky stripes along and between scale rows. Fins bright carmine. First dorsal largely covered by blackish blotch.

Caranx trachurus Lacépède, Hist. Nat. Poiss., vol. 3, ff. 56, 60, 1802 (Atlantic; Pacific; Mediterranean).

— Richardson, Ichth. China and Japan, p. 273, 1846 (China; Japan). — Bleeker, Ned. Tydsk. Dierk., vol. 2, p. 289, 1865 (Amboina). — Pappe, Synop. Edible Fish. Cape of Good Hope, p. 25, 1853; ed. 2, p. 18, 1866 (Cape Seas).

— Gilchrist, Cat. Fish. South Africa; p. 124, 1902 (reference).

Amia endekataenia (Bleeker)

Apogon endekataenia Bleeker, Nat. Tijds. Ned. Indië, vol. 2, 1852, p. 449. Banka or Lepar. — Pellegrin, Bull. Mus. Hist. Nat. Paris, vol. 10, 1904, p. 544 (Djibouti, Red Sea). — Ogilby, Proc. Roy. Soc. Queensland, vol. 21, 1908, p. 23 (Green Island, Cairns and Dunk Island). — Weber, Siboga Exped., vol. 65, 1913, p. 225 (Buton Laut).

Amia endekataenia Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 85, pl. (32) 310, fig. 2 (Singapore, Banka, Bawean, Java). — Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 73 (Bacan).

— Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 531, pl. 23, fig. 1, Oct. 1927
(off St. Helena Bay, Table Bay, False
Bay, Agulhas Banks, Natal, Zululand,
Delagoa Bay, to 100 fathoms).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, p. 443, 1934
(Durban and Umhlali rock pools,
Natal).

cunate. Pectoral rays 16 to 18.

Shore fishes of the warmer Indian and western Pacific, but not entering Oceania. Some species ascend rivers. Valued as food fishes and also the isinglass made from their air bladders or "sounds".

Analysis of 4 species.

a. Otoliths. Anal with 7 or 8 branched rays; body uniform or without large dark blotches.

b.1 Anal origin before middle of soft dorsal base; scales about 100 along above lateral line; 11 scales above lateral line; soft dorsal rays 24 to 27; depth 3 1/4. versicolor.

b.2 Anal origin behind middle of soft dorsal base; scales 60 to 70 above along lateral line; 7 or 8 scales above lateral line; dorsal rays 28 to 31.

Caranx trachurus japonicus Schlegel, Fauna Japonica, Pois., pts. 5-6, p. 109, pl. 59, fig. 1, 1844 (type locality, Japan).

Selar japonicus Bleeker, Verh. Batavia. Genoot. (Nat. Schth. Japan), vol. 25, p. (14) 35, 1853 (Nagasaki); (Nat. Schth. Japan), vol. 26, p. 5, pl. 8, fig. 1, 1857 (Nagasaki); Act. Soc. Sci. Ind. Neerl., vol. 3, no. 3, p. 3, 1857-58 (Kioesio), p. 6 (Japan).

premaxillary row enlarged, usually distinct canines in both jaws, often only in upper and received in pits in opposite jaw; lower jaw with single row of well separated teeth and sometimes single outer villiform row. Preopercle weakly denticulate in young, often crenulate to smooth with age. Preorbital narrow. Opercle with 2 weak spines. Gill rakers few, short, slender. Pseudobranchiae present. Pores on snout, none on chin. Lateral line with tubes simply bifurcate or arborescent. Air bladder present, usually with lateral appendages. Pyloric appendages few. Dorsals 2, deeply notched, joined basally, 9 to 11 weak spines and 17 to 31 rays. Anal spines 1 or 2, small, rays 7 to 11. Caudal rounded or

Scales moderate to small, cycloid, adherent.

"Trachurus japonicus Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 67, 1901 (reference). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 411 (Otaru, Hakodate, Aikawa), Tokyo, Misaki, Kagoshima). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokio, vol. 33, p. 123, 1913 (reference). — Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 158, 1920 (Hakodo). — Wakiya, Ann. Carnegie Mus., vol. 15, p. 144, 1924 (Aomori; Inujako; Sendai Bay; Niigata; Tokyo Bay; Kii; Iwajima; Amakusa; Fukan, and Seishin, Korea).

~~4956~~

Genus Atolithes Aken Cur 130

Atolithes Aken, Isis, 1817, p. 1782.
Type Johnius ruber Bloch, virtual
monotype. (Based on Cuvier.)
Atolithus Cuvier, Règne Animal,
ed. 2, vol. 2, 1829, p. 172. Type
Johnius ruber Bloch, designated
by Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 80.

Body elongately oblong or elliptical,
compressed. Head moderate. Snout
usually somewhat pointed. Eyes moderate
or small, advanced. Maxillary nearly
or quite slips below preorbital.
Mouth oblique, terminal, wide.
Lower jaw longer, projects beyond
upper. No barbels. Bands of
villiform teeth in both jaws, outer

Trachurus capensis Castelnau,
Mém. Poiss. Afrique australe, p. 43,
1861 (type locality, Cape of Good
Hope).

Trachurus argenteus Wakiya,
Ann. Carnegie Mus., vol. 15, p. 145,
1924 (type locality, Kii; Tokyo Bay;
Iwajima; Amakusa; Ryukyu;
Formosa)

Scales with
13 to 18 basal radiating striae; 47 to
103 apical denticles with 2 transverse
series of basal elements; circuli fine.

D. VIII–I, 9, I, fourth spine 2 1/4
in head, second ray 1 1/2; A. II, 8, I,
second spine 2 7/8, second ray 1 2/3;
caudal 1 1/8, deeply emarginate;
least depth of caudal peduncle
1 1/6; pectoral 1 1/2; ventral 1 3/5.

Brown, paler on under surfaces,
about 5 longitudinal darker lines
above lateral line and parallel
with its course, below it horizontally.
Iris slaty. Fins all grayish, spinous
dorsal dusky brown terminally and
soft dorsal with dusky brown basal
band next to subbasal whitish one.

Red Sea, India, Andamans, East Indies,
Philippines.

1305

Trachurus semispinosus

— Fowler, Proc. U. S. Nat. Mus., vol. 56, 1918, p. 290 (Cape of Good Hope); Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 214 (Natal).

16 to 48 fathoms.

Cynoscion atelodus Stead, Fishes of Australia, 1906, p. 113 (New South Wales); Edible Fishes of New South Wales, 1908, p. 67, pl. 38. Roughley, Fishes of Australia, 1916, p. 115, pl. 36 (New South Wales).

Atractoscion atelodus Gilby, Handbook of Sydney, 1898, p. 130; Mem. Queensland Mus., vol. 6, December 19, 1918, p. 67 (Sydney). McCulloch, Fishes New South Wales, ed. 2, 1927, p. 58, pl. 24, fig. 212a.

Atolithus teraglin Macleay, Proc. Linn. Soc. New South Wales, vol. 5, 1881, p. 48. Sydney market.

Depth 4 to 4½; head 3⅕ to 3½. Eye 5 to 7 in head, 1⅓ to 2 in snout, 1⅓ to 1½ in interorbital, maxillary reaches below hind eye edge; preopercle edge with some wide spaced short spines,

Depth 4 1/3 to 5; head 3 1/4 to 3 3/4, width 2 1/3 to 2 2/5. Snout 3 to 3 1/3 in head from snout tip; eye 3 1/5 to 3 1/2, subequal with snout to 1 1/5 in snout with age, subequal with interorbital, broad adipose lid covers last 2/5 to 1/2 of eye; maxillary reaches eye, expansion 1 4/5 to 2 1/3 in eye, length 2 1/4 to 2 1/2 in head from snout tip; interorbital 3 1/3 to 4 1/4, slightly elevated. Gill rakers 16 + 38 to 40, slender, 2/3 of eye; gill filaments 3/5 of gill rakers. Scales 41 to 44 + 40 or 41 in lateral line,

D. I, VIII — I, 32 to I, 34, fourth spine 2 to $2\frac{1}{10}$ in total head length, first branched ray $2\frac{2}{5}$ to $2\frac{1}{2}$; A. II — I, 28 to I, 32, first branched ray $2\frac{3}{5}$ to $2\frac{7}{8}$; caudal $1\frac{1}{3}$ to $1\frac{2}{5}$, well forked; pectoral $1\frac{1}{10}$ to $1\frac{1}{8}$; ventral 2 to $2\frac{1}{10}$.

Slate gray above, below whitish. Dusky spot on opercle edge above less than pupil. Fins pale.

→ Warmer Atlantic and Mediterranean.

— Delagoa Bay, Zululand, Natal, Cape of Good Hope, East Indies, China, Formosa, Riu Kiu, Korea, Japan. Also in the

U. S. N. M., No. 22590. Japan.
Government of Japan. Length 194mm.
As Trachurus japonicus.

U. S. N. M., No. 44883. Japan.
Government of Japan. Length 103
to 119 mm. Two examples.

U. S. N. M., No. 44896. Japan.
Government of Japan. Length 320?
to 322? mm. Scales 30 + 35 to 38.
As Caranx muroadsi.

U. S. N. M., No. 45284. Fusan, Korea.
P. L. Jouy. October 1884. Length 95
to 108 mm. Two examples.

U. S. N. M., No. 48149. Japan.
Y. Nozawa. Length 109 to 120 mm.
Two examples.

U. S. N. M., No. 57531. Tokio.
P. L. Jouy. Length 203mm. As
Trachurus japonicus.

Interorbital flat, with median groove. Opercle spineless. Preopercle serrated, with spines or denticles at angle. Dorsal with 8 spines, higher soft fin with 14 or 15 rays. Anal with 3 graduated spines and 14 or 15 rays. Pectoral rays 13 or 14.

Enoplosus armatus (White)

Chaetodon armatus (Shaw) White,
Voyage New South Wales, 1790, p. 254,
pl. 1. New South Wales [Botany Bay, by
Whitley 1930 J. & Shaw, Natural. Miscellany,
vol. 2, 1791, pl. 57 (New Holland). &
Walbaum, Artedi Pisc., vol. 3, 1792, p. 444

U. S. N. M., No. 26243. Japan.
Prof. E. S. Morse. Length 113 to 270
mm. Seven examples. Scutes 30 to
35 + 35 or 36. The scute depth is
very variable and I find same
nearly equal in both sections
of the lateral line and still
others where the anterior section is
a trifle higher, though the usual
condition is to find the posterior
section higher.

One genus, in the temperate waters of southern Australia.

Genus Enoplosus Lacépède

Enoplosus Lacépède, Hist. Nat. Poiss., vol. 4, 1802, p. 540. Type Enoplosus white Lacépède = Chaetodon armatus (Shaw) White, monotypic.

Enoplosis Duméril, Zool. Analytic, 1806, p. 335 (134). Type Chaetodon armatus (Shaw) White.

Body depth more than half its length. Head compressed, with upper profile very concave. Snout short, conic. Teeth villiform, without canines, in jaws, on vomer, palatines and tongue.

1310

Trachurus declivis (Jenyns)

Caranx declivis Jenyns, Zool. Voy. Beagle, Fish., 1.68, pl.14, 1842 (type locality, King George's Sound).

Lempe. Deutsche Südpolar Exped., vol. 15, pt. 2, 1914, p. 233 (Simonstown). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 350 (references). 1/m Thompson, Marine Biolog. Rep. South Africa, vol. 4, 1918, p. 77. 1/m

Atractoscion aequidens (Cuv Bonde, Fisks Marine Surv. South Africa, Special Rep., vol. 1, 1923, p. 16. (South Africa). mm

Atractoscion aequidens Barnard, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 575 (Table Bay, False Bay, Agulhas Bank to Algoa Bay, Natal, in 30 fathoms).

Otolithus atelodus Günther, Ann. Mag. Nat. Hist. London, series 3, vol. 20, 1867, p. 60. Australia. 1/m Woods, Fish. Fisher. New South Wales, 1882, p. 54, pl. 17. 1/m Ogilby, Edible Fishes New South Wales, 1893, p. 75, pl. 23; Sea Fisher. Rep. Shells, 1898, p. 28 (off Broken Head, New South Wales,

Trachurus declivis McCulloch,
Biol. Res. Endeavour, vol. 3, pt. 3,
p. 125, pl. 34, fig. 2, April 21, 1915
(mouth of Wide Bay, Queensland;
Investigator Strait, South Australia).
Austral. Mus. Mem., no. 5, pt. 2, p. 184,
Sep. 10, 1929 (reference).

Waite, Mem. Austral. Mus., no. 4, p. 72,
1899 (New South Wales).
— McCulloch, Zool. Res. Endeavour,
vol. 1, p. 79, 1911.

— Roughley, Fishes of Australia, p. 101,
1916. — Waite, Rec. South Australian
Mus., vol. 2, no. 1, p. 102, fig. 157, 1921.
— McCulloch Waksiya, Rep. Carnegie
Inst., vol. 15, p. 146, 1924 (Kwajima;
Amakusa; Formosa). — McCulloch,

depth 2 1/2; head 2 2/3, width 2. Snout 3 4/5 in head; eye 3 4/5, subequal with snout or interorbital; maxillary reaches 3/4 in eye, expansion 1 4/5, length 2 in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital 4, only very slightly convex; preopercle ridge entire and edge minutely serrated. Gill rakers 6+13, lanceolate, greatly more than gill filaments or 1 3/4 in eye.

Scales 36 in lateral line 6-caudal base and 5 more on latter, 4 above, 10 below; 7 predorsal, 4 rows on cheek; head naked, except cheeks and opercles. Tubes in lateral line large, well exposed and each with broad crimped scale.

Trachurus novae zelandiae Richardson, Rep. 12th Meet. Brit. Assoc. Adv. Sci., p. 21, 1842 (late 1843) (type locality, New Zealand; Amboina; Sharks Bay). (on Le Jaurel de la Nouvelle-Zélande Cuvier, Hist. Nat. Poiss., vol. 9, p. 26, March 1833, vernacular only). — Mc Culloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 123, pl. 34, fig. 3, April 21, 1915 (Victoria; Bass Strait; Tasmania; South Australia; Great Australian Bight; Western Australia; Auckland); Austral. Mus. Mem., no. 5, pt. 2, p. 185, Sep. 10, 1929 (reference). — Waite, Rec. South Austral. Mus., vol. 2, no. 1, p. 102, April 23, 1921 (reference).

Apogon noordzieki Bleeker, Nat. Tijds. Ned. Indië, vol. 17, 1859, p. 336. Patjitan, Java. — Meyer, Ann. Soc. Espan. Hist. Nat. Madrid, vol. 14, 1885, p. 12 (Cebu). Amia noordzieki Bleeker, Atlas Ichth. Ind. Neerl., vol. 7, 1873-76, p. 77 (Java); vol. 8, 1876-77, pl. (74) 352, fig. 1.

(Apogon) taeniatus (non Cuvier) Day, Fishes of India, pt. 1, 1875, p. 101 (note).

Trachurus trachurus (not Linnaeus) Günther, Cat. Fish. Brit. Mus., vol. 2, p. 419, 1860 (Australia; Port Jackson; New Zealand). — Hutton, Cat. Fish. New Zealand, p. 16, pl. 3, fig. 23, 1872. — Inc Coy, Prodr. Zool. Victoria, dec. 2, pl. 18, 1878. — Johnston, Proc. Roy. Soc. Tasmania, pp. 85, 119, 1882; p. 32, 1890. — Ogilby, Edible Fish. New South Wales, p. 77, 1893.

hind end, at base of last ray, nearly opposite last dorsal ray. Caudal lunate. Pectoral pointed.

Shore fishes of South Africa and South East Australia, reaching a large size and valued as food.

Cuv 179

Atractoscion aequidens (Cuvier)

Atolithus aequidens Cuvier, Hist. Nat. Poiss., vol. 5, 1830, p. 66. Cape of Good Hope. 1/m Andrew Smith, Ill. Zool. South Africa, Fishes, 1849, pl. 13 (South Africa; Table Bay). 1/m Pappe, Synopsis Edible Fishes Cape, 1853, p. 16 (Cape). 1/m Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 306 (no locality). 1/m Bleeker, Naturk. Tijdschr. Nederl. Indie, vol. 21, 1860, p. (50, 52) 64 (Cape). 1/m Castelnau, Mém. Poiss. Afrique Australe, 1861, p. 10 (Simon's Bay). 1/m Regan, Ann. Natal Mus. vol. 1, pt. 3, 1908, p. 245 (Bird Island). 1/m

1314

Decapterus leptosomus (not Cuvier) Stead, Edible Fish. New South Wales, p. 87, 1908.

Amia multitaeniata (Cuvier)

Apogon multitaeniatus (Ehrenberg) Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 159. Red Sea. — Rüppell, Atlas Reise nördl. Afrika, Fische, 1828, p. 47 (name). — Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 20, 1870, p. 713 (Kosseir, Red Sea). — Day, Proc. Zool. Soc. London, 1870, p. 681 (Andamans). — Day, Fishes of India, pt. 1, 1875, p. 57, pl. 16, fig. 1 (Madras and Bombay). — Day, Fauna Brit. India, vol. 1, 1889, p. 491.

Apogon (Lepidamia) multitaeniatus Klunzinger, Fische Roth. Meer., 1884, p. 20.

Depth 4 to 4 3/4; head 3 1/3 to 4, width 2 to 2 1/8. Snout 3 to 3 1/5 in head from snout tip; eye 3 2/3 to 3 7/8, 1 to 1 1/4 in snout, little greater than interorbital, hind adipose lid covers 1/3 of eye; maxillary reaches ~~reaches~~ eye, expansion 2 to 2 1/5 in eye, length 2 1/2 to 2 3/5 in head from snout tip; interorbital 4 to 5 1/5, broadly convex. Gill rakers 11 to 14 + 40 or 41, equal gill filaments or 1/2 in eye.

Scales 32 to 35 + 37 or 38 in lateral line, arch 1 1/4 to 1 1/2 in straight section; anterior scutes 2/3 to 3/4 of posterior.

D. I, VIII – I, I, 29, I (+ 2) or I, I, 30, I, third spine 1 2/3 to 1 7/8 in

total head length, first branched ray 2 to 2 1/8; A. II–I, 26, I or I, 27, I, first branched ray 2 1/3 to 2 3/5; caudal 1 1/3 to 1 2/5, deeply forked; least depth of caudal peduncle 7 1/2 to 7 3/4; pectoral 1, rays II, 17 to 19; ventral rays I, 5, fin 1 3/4 to 2 in total head length.

Back olive brown, sides and below silvery white. Iris gray. dorsal and caudal brownish, other fins paler to whitish.

East Indies, Formosa, Japan, Queensland, Western Australia, South Australia, New South Wales, Victoria, Tasmania, New Zealand.

U. S. N. M., No. 27887. Auckland, New Zealand. Auckland Museum. Length 315 mm.

U. S. N. M., No. 48810. Port Jackson, New South Wales. Dr. J. D. Ogilby. Length 135 to 143 mm. Two examples.

U. S. N. M., No. 59919. Port Jackson. ~~Dr. J. D. Ogilby~~ D. G. Stead. Length 120 to 200 mm. Ten examples.

ciliated. Upper surface of head and suborbitals naked, cheek and maxillary scaly. Small scales form sheaths along dorsal and anal bases. Lateral line parallel with profile of back. Dorsal with 9 slender spines, higher than 14 to 18 rays of soft fin. Anal with 3 small graduated spines, lower than 9 or 10 rays of soft fin. Caudal deeply forked. Ventrals inserted slightly behind pectoral bases.

Food fishes of small or moderate size, sometimes appearing in great schools and of interest to anglers. Jenyns proposed the generic name

1318

Genus Selar Bleeker

Selar Bleeker, Nat. Tijds. Ned. Indie, vol. 1, pp. 343, 352, 1850. (Type Caranx boops Cuvier, designated by Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 14, June 4, 1918.)

~~1944~~

Depth 3; head little over 3. Eye 3 in head, 1½ in snout, little greater than interorbital; maxillary reaches ⅓ in eye, angular, truncate behind; opercle smooth, entire; limb preopercle edge minutely denticulate; lower preorbital edge serrate. Lower gill rakers 27.

Scales 68 to 71 in lateral line besides few more on caudal base; 12 above, 12 below; snout completely scaly.

D. XIII, 10, spines graduated to fourth which longest; A. III, 9.

Uniform silvery, with delicate salmon-pink tinge on body and fins. Iris silvery, pupil black. Length 200 mm.

(Barnard.)

South Africa, East Australia, New Zealand.

Body oblong, ovoid, profiles equally convex. Head moderate. Eye large, with broad adipose lids behind, deep notch on shoulder girdle inside gill opening. Front part of lateral line little arched, well bent downward to below and opposite last dorsal spine, thrice in straight section. Scutes on latter, deep. Scales moderate. Cheek and breast scaly. Soft dorsal and anal with basal scaly sheaths. Dorsal spines weak, third and fourth more than half of head. Dorsal rays longer than anal. Caudal deeply forked. Pectoral less than head. Ventral half of head.

One species, closely related to Trachuropa differing chiefly in the more advanced straight section of the lateral line.

Selar boops (Cuvier)

Caranx boops Cuvier, Hist. Nat. Poiss., vol. 9, p. 46, 1833 (type locality, Amboina; Vanicolo). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 431, 1860 (copied). had. Fijds. Dieks., vol. 1, p. 235, 1863 (reference); — Bleeker, Verslag. Kon. Akad. Wet. Amsterdam, vol. 16, p. 360, 1864 (Saparoua); vol. 2, no. 2, p. 275 (Obi). — Day, Fishes of India, pt. 2, p. 218, pl. 49, fig. 2, 1876. — Károli, Termesz. Füzetiek, Budapest, vol. 5, p. 160, 1881 (Singapore). — Meyer, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 24, 1885 (North Celebes, Rubi, New Guinea). — Day, Fauna British India, Fishes, vol. 2, p. 157, 1889.

Cat 179

1293

Plagiogenion rubiginosus (Hutton)

Therapon rubiginosus Hutton, Trans. New Zealand Institute, vol. 8, may 1876, p. 209. Otago

Plagiogenion rubiginosus Forbes, Trans. New Zealand Institute, vol. 22, 1890, p. 273 (Canterbury, mouth Riyer Avon). 1/24 Waite, Trans. New Zealand Institute, vol. 45, 1913, p. 218, pl. 7 (Canterbury); Records Canterbury Mus., vol. 2, pt. 1, 1913, p. 18. 1/24 Mc Culloch, Biol. Results Endeavour, vol. 2, No. 3, 1914, p. 104 (East Slope Bass Strait). 1/24 Barnard, Ann. South African Mus., vol. 21, p. 1, 1927, p. 593 (off Cape Peninsula 30°17'S. 17°26'E., in 180 fathoms).

Plagiogenion macrolepis Mc Culloch, Biolog. Results Endeavour, vol. 2, No. 3, July 3, 1914, p. 104, pl. 20. Great Australian Bight, west of Eucla, 33°20'E. 126° to 127°, in 70 to 120 fathoms.

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 63, 1906 (1907) (Bacon).

— Weber, Siboga Exped., vol. 57, p. 395, Fische, 1913 (Celebes, Obi major).

— Beaufort, Bijd. Dierk. Amsterdam, vol. 19, p. 132, 1913 (Waoneh, Waigiu).

— Mc Culloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 138, April 21, 1915 (note).

Caranx boops Macleay, Proc. Linn. Soc. New South Wales, vol. 8, p. 266, 1883 (China Straits, New Guinea).

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Genus Plagiogenion Forbes

Plagiogenion Forbes, Trans. New Zealand Institute, vol. 22, May 1890, p. 272. Type Therapon rubiginosus Hutton, monotypic.

Body oblong, moderately compressed. Teeth vestigial or microscopic, if present uniserial and sometimes few on vomer. Preopercle broadly rounded, vertical edge greatly concave. Preorbital projects, somewhat angular anteriorly. No lateral ridge on caudal peduncle. Short scaly flap between ventral bases. Dorsal spines 12, fin little separated from soft dorsal or notch shallow and penultimate spine long as last. Last dorsal and anal rays not extended.

1322

Caranx (Selar) boops Weber and Beaufort, Fish. Indo Austral. Archip., vol. 6, p. 209, fig. 43, 1931 (Mian; Buton; Obi major; Waigiu).

Amia wilsoni Fowler, Proc. Acad. Nat. Sci. Phila., 1918, p. 22, fig. 10, Philippines; op. cit., 1927, p. 274 (types: Philippines).

Selar boops Bleeker, Nat. Tijds. Ned. Indie, vol. 3, p. 740, 1852 (Macassar); Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 51, 1852 (Batavia); Nat. Tijds. Ned. Indie, vol. 4, p. 596, 1853 (Halmaheira); vol. 6, p. 457, 1854 (Amboina); vol. 7, p. 361, 1854 (Batjan); vol. 8, p. 345, 1855 (Tikoe, Sumatra), p. 393 (Amboina); vol. 10, p. 360, 1856 (Ternate), p. 469 (Saparoea); vol. 12, p. 193, 1856 (Ternate), p. 214 (Nias); Act. Soc. Sci. Ind. Neerl., vol. 1, No. 5, p. 6, 1856 (Amboina); vol. 3, No. 9, p. 3, 1857-58 (Trussan); Nat. Tijds. Ned. Indie, vol. 15, p. 220, 1858 (Biliton).

~~4284~~

First all pale or light uniform brownish.
Arabian, Japan, Hawaii.

52818 U.S.N.M. Hawaiian Islands.
Bureau of Fisheries (No. 05240).
Length 268 mm.

62637 U.S.N.M. Honolulu.
Dr. D. S. Jordan. Length 330 mm.
1 example. A.N.S.P. Honolulu. Bishop Museum.

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1918, p. 15 (Philippines); vol. 79, 1927, p. 269 (Philippines material); Mem. Bishop Mus., vol. 10, p. 144, 1928 (Shortland Island; "Fate"). — Whitley, Journ. Pan Pacific Inst., vol. 3, no. 1, p. 12, January - March 1928 (Santa Cruz Islands). — Fowler, Mem. Bishop Mus., vol. 11, no. 5, p. 326, 1931 (reference). — Weber and Beaufort, Fishes Indo Australian Archip., vol. 6, p. 209, fig. 43, 1931 — McCulloch, Australian Mus. Mem., no. 5, pt. 2, p. 190, Sep. 10, 1929 (reference). — Fowler, Mem. Bishop Mus., vol. 11, no. 6, p. 403, 1934 (China Straits, New Guinea); Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 140, 1935 (Bangkok).

9 or 10 above, 17 or 18 below, 60 to 62 predorsal forward close behind snout tip; 9 or 10 scales transversely across cheek to preopercle ridge and 6 more across preopercle flange. Scales with 6 basal radiating striae, 44 to 57 apical denticles, slender points, with 5 or 6 transverse series of basal elements; circuli fine.

D. $\frac{X}{\equiv}$ – $\frac{I}{\equiv}$, 11, $\frac{I}{=}$, fourth spine 1 7/8 to 2 in total head length, second ray 2 3/4 to 3 1/3; A. $\frac{III}{\equiv}$, 9, $\frac{I}{=}$ or 10, $\frac{I}{=}$, third spine 3 3/5 to 3 3/4, first ray 2 2/5 to 3 1/5; caudal 1 1/5 to 1 1/4, deeply forked, long slender lobes pointed narrowly; least depth of caudal peduncle 3 2/3 to 4; pectoral 1 2/5 to 1 3/4; ventral 1 1/5 to 2.

Back pale brown, sides and below whitish, with more or less silvery sheen. Iris pale yellowish to whitish.

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Caranx gervaisi Castelnau,
(Rep. Fish. Australia) Vict. Offic.
Rec. Philadelphia Exhib., p. 18,
1875 (type locality, Cape York,
Queensland).

depth 2 4/5; head 2 2/5, width 2. Snout 4 in head, eye 2 3/4, greater than snout or interorbital, maxillary reaches opposite eye center, expansion 3 in eye, length 2 1/8 in head, teeth in villiform bands, narrow in jaws, on vomer and palatines; interorbital 4 1/4, level; preopercle ridge entire, edge finely serrated. Gill rakers 7 + 16, lanceolate, longer than gill filaments or 2 2/3 in eye; 4 above and 4 below rudimentary.

Scales 72 in lateral line to caudal base and 3 more on latter, 2 above, 6 below, 4 predorsal, 2 rows on cheeks. Lateral line complete. Scales with 15 basal radiating striae; apical denticles 70 to 86, with 2 or 3 transverse series of basal elements; circuli fine.

D. VIII — I, 9, I, third spine 1 7/8 in head, first ray 1 2/3; A. II, 8, I, second spine

Trachurops crumenophthalmus (not Bloch) Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 30, 1906 ("Fate"; Shortland Island).

Caranx freeri Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 63, fig. 4, 1906 (1907) (type locality, San Fabian).

Erythrichthys scintillans Jordan and Thompson, Proc. Acad. Nat. Sci. Philadelphia, vol. 41, 1912, p. 579. Hilo (on Erythrichthys schleyeli Jordan and Evermann).

Depth 3 2/3 to 3 3/4; head 3 to 3 1/8, width 1 7/8 to 2. Snout 3 2/3 to 3 3/4 in head from snout tip; eye 3 to 3 1/5, little greater than snout, subequal to slightly greater than interorbital; maxillary reaches 1/4 to 1/3 in eye, length 2 1/3 to 2 3/5 in head from snout tip; teeth obsolete or rudimentary in adult, only few rudimentary patches of villeform or simple minute conic ones may be present; interorbital 3 1/10 to 3 1/2, slightly convex; preopercle edge entire, membranous. Gill rakers 13 + 25, lanceolate, equal gill filaments, which 2 1/3 in eye.

Scales 69 or 70 in lateral line to caudal base and 5 to 7 more on latter;

Depth 3 1/4 to 3 1/3; head 3 1/8 to 3 1/3, width 2 to 2 1/10. Snout 3 1/5 to 3 2/5 in head from snout tip; eye 3 to 3 1/5, greater than snout or interorbital, with broad adipose lids; maxillary reaches 1/3 in eye, expansion 2 1/3 to 2 2/5, length 2 1/10 to 2 1/8 in head from snout tip; interorbital 3 7/8 to 4, little convex. Gill rakers 10 + 24, lanceolate.

Scales very small, on cheeks, chest and body. Basal scaly sheaths to soft dorsal and anal anteriorly, low. Arch of lateral line 2 1/3 to 2 2/3 in straight section, which begins before soft dorsal origin and with 47 to 49 scutes.

D. VIII — I, 23 or 24, third spine 2 to 2 1/8 in total head length, first ray 2 1/4 to 2 1/3; A. II — I, 20, first

ray $2\frac{1}{2}$ to $2\frac{2}{3}$; caudal $1\frac{2}{5}$? to $1\frac{1}{3}$, forbed; least depth of caudal pedumcle $5\frac{2}{3}$ to $6\frac{1}{2}$; pectoral $1\frac{1}{6}$ to $1\frac{1}{5}$; ventral $1\frac{4}{5}$ to 2.

Back olive, sides and below silvery white. Large blackish brown blotch on opercle marginally and above, reflected on shoulder, whole less than eye. Dorsal and caudal brown, other fins whitish. Iris gray.

Andamans, Malaya, East Indies, Philippines, Queensland, Melanesia.

Apogon novemfasciatus (non Cuvier) Schlegel, Fauna Japon., Poiss., pt. 1, 1842, p. 2, pl. 2, fig. 2.

Apogon schlegelii Bleeker, Verh. Batav. Genootsch. (Mém. Jap.), vol. 26, 1854, p. 55 (on Schlegel).

Apogon schlegeli Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, 1901, p. 900, fig. 5 (Nagasaki).

Apogon fasciatus (non Shaw) Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 241 (India, Amboyna, Fiji). — Kner, Reise Novara, Zool., vol. 1, pt. 5, 1865, p. 43 (Pulupinet, Tahiti, Hong Kong, Java). — Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 20, 1870, p. 712 (Red Sea).

Apogon (Amia) fasciatus Klunzinger, Fische Roth. Meer., 1884, p. 20 (part).

Nine examples. Atulayan Bay, Luzon. June 17, 1909. Length 72 to 126 mm.

One example. Bolalo Bay. December 20, 1908. Length 138 mm.

6790, 6791, 2320, 20321. Bolinao Bay. May 10, 1909. Length 68 to 78 mm.

Two examples. Lingayen Gulf. May 11, 1909. Length 118 to 124 mm.

22710, 22711. Port Galtom. December 15, 1908. Length 128 to 130 mm.

One example. Santa Cruz Island, Marinduque. April 24, 1908. Length 53 mm.

Cuv 129

Pseudupeneus chrysonemus Jordan and Evermann

Pseudupeneus chrysonemus Jordan and Evermann, Bull. U. S. Fish Comm., vol. 22, 1902 (1903), p. 186. Hilo; Honolulu. 1/m Jenkins, Bull. U. S. Fish Comm., vol. 22, 1902 (1903), p. 454 (Honolulu). 1/m Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 258, pl. 21 (Honolulu; Hilo).

Upeneus chrysonemus Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 648 (Honolulu).

Upeneus taeniatus (not Kner) Fowler, Copeia, no. 112, November 20, 1922, p. 83 (Hawaii); Mem. Bishop Mus., vol. 10, 1928, p. 229 (type of Pseudupeneus chrysonemus Jordan and Evermann, Hilo, Honolulu).

A1184, A1185. Gane Road, Gillolo Island. December 1, 1909. Length 240 to 249 mm. A836,

A834, A.835, A849. Jaliene Island. November 9, 1909. Length 287 to 294 mm.

A1100. Mabyan Island. November 28, 1909. Length 260 mm.

A1099. Ternate market. November 26, 1909. Length 278 mm.

Apogon variegatus Valenciennes, Nouv. Ann. Hist. Nat. Paris, vol. 1, 1832, p. 55. Mauritius. — Regan, Trans. Linn. Soc. London, vol. 12, ser. 2, 1907, p. 224 (Diego Garcia, Chagos Archipelago). Apogonichthys variegatus Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 250 (Apia and Pago Pago). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 32 (Samoa).

1908. Length 41 mm.

6487. Silig, Lubang Island. July 15, 1908. Length 304 mm.

11654 and 11655. Tulumlatan Island, east of Zamboanga. September 9, 1909. Length 228 to 250 mm.

A574. Tutu Bay, Jolo. September 19, 1909. Length 369 mm.

20123. Ulugan Bay near mouth of Bakeli River, Palawan. December 28, 1908. Length 123 mm.

10010. Amboina Island, Dutch East Indies. December 6, 1909. Length 170 mm.

20844. Tomahu Island, December 11, 1909. Length 64 mm.

U. S. N. M. No. 56103. Philippines. Bureau of Fisheries (3807). Length 190? mm.

A. N. S. P., two examples. Philippines. Commercial Museum of Philadelphia. Length 178 & 220 mm.

69711 U.S.N.M. Honolulu. W.H. Pease.
Length 98 to 112 mm. 2 examples.

50705 U.S.N.M. Honolulu. Dr. O.P.
Jenkins. Length 265 mm. Type.

55127 U.S.N.M. Hanalei Bay,
Kailua. Albatross Collection 1902.
Length 132 to 204 mm. 5 examples.

55487 U.S.N.M. Honolulu Reef.
Albatross Collection. May 8, 1907.
Length 60 to 80 mm. 5 examples.

55512 U.S.N.M. Hawaiian Islands.
Albatross Collection. Length 125 to 176 mm.
9 examples.

55515 U.S.N.M. Hawaiian Islands.
Albatross Collection (No. 03892). Length 280 mm.

28164 A.N.S.P. Honolulu. Bur. Fisher.
(03907). Length 129 mm.

25149 A.N.S.P. Honolulu. Bur. Fisher.
(03996). Length 355 mm.

Genus Trachurops Gill

Trachurops Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, pp. 431, 432. (Type Scomber crumenophthalmus Bloch, monotypic.)

Differs from Selar chiefly in the anterior part of the lateral line scarcely arched, the straight section beginning below the eighth to tenth dorsal rays and the 33 to 38 keeled scutes below the middle of the soft dorsal.

One species.

(Honolulu); Mem. Bishop Mus., vol. 10, 1928, p. 223, pl. 19 B (Honolulu).

1/2m Zugmayer, Abhandl. Kn. Bayer. Akad. Wiss., Math.-physika. Klasse, vol. 26, band 6, 1913, p. 11 (Aman). ~~Gm~~

Erythrichthys schlegeli Franz, Abhandl. Kais. Bayer. Akad. Wiss., vol. 4, suppl. band 10, 1910, p. 46 (Aburatsubu). 1/m

Jordan and Thompson, Proc. U.S. Nat. Mus., vol. 41, 1912, p. 598, fig. 15 (Tokyo and Misaki).

Erythrocles schlegeli Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, No. 2, 1925, p. 245 (Toba market, province of Shima). 1/m

Tanaka, Fishes of Japan, vol. 41, December 23, 1917, p. 785, pl. 170, fig. 470 (Tokyo).

Erythrocles schlegelii Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 646 (Honolulu).

Trachurops crumenophthalmus
(Bloch)

Scomber crumenophthalmus
Bloch, Naturg. Ausland. Fische,
vol. 7, pt. 10, p. 77, pl. 343, 1793
(type locality, Acara Bay, West
Africa).

Caranx crumenophthalmus Lacépède,
Hist. Nat. Poiss., vol. 4, pp. 703, 705,
1802 (copied).

cul 29

Erythrocles schlegeli (Richardson)

Emmelichthys schlegeli Richardson, Ichth. China Japan, 1846, p. 272. Sea of Japan. (On Erythrichthys Schlegel, Fauna japonica, Poiss., pt. 1, 1842, p. 17, pl. 63, fig. 1. Nagasaki.) 1/m Bleeker, Verhandel. Batavia. Genootsch. (Mem Isles. Japan.), vol. 26, 1857, p. 20 (on Schlegel). 1/m Boulenger, Proc. Zool. Soc. London, 1887, p. 239 (muscat). Emmelichthys schlegelii Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 395 (compiled). 1/m Jordan and Snyder, Annotat. Zool. Japon., vol. 3, 1901, p. 82 (Nagasaki and Yokohama).

Erythrichthys schlegelii Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 245, fig. 102, pl. 19 (Hilo). 1/m

→ Izuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., 1920, p. 147 (Osaka). 1/m Fowler, Bull. Bishop Mus., no. 38, 1927, p. 16

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Caranx crumenophthalmus

† — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 429, 1860 (Pearl Islands; Anaiteum, New Hebrides).

— Schmeltz, Cat. Mus. Godeffroy, No. 2, p. 7, 1865 (Samoa); No. 3, p. 9, 1866 (Samoa); No. 5, p. 27, 1874 (Samoa; Tonga); No. 7, p. 45, 1879 (Samoa; Tonga).

— Günther, Journ. Mus. Godeffroy, vol. 5, pt. 11, p. 131, 1876 (Hawaii; Society Islands; South Seas).

Rep. Voy. Challenger, vol. 1, pp. 56, 59, 1880 (Ihares Harbor, Admiralty Islands).

— Day, Fishes of India, pt. 2, p. 217, pl. 49, fig. 1, 1876 (Andamans). — Günther,

~~1576~~

Genus Erythrocles Jordan Cuc130

Erythrocles Jordan, Proc. Acad. Nat. Sci. Philadelphia, 1919, p. 341. Type Emmelichthys schlegeli Richardson, virtually. Erythrocles Jordan proposed to replace Erythrichthys Schlegel. Erythrichthys (not Bonaparte 1831) Schlegel, Fauna Japonica, Poiss., pts. 7-9, 1845, p. 117. No species name given. Type Emmelichthys schlegeli Richardson.

Last dorsal spines connected by membranes, spines 11, hind ones low and last spine longer than penultimate,

— Pöhl, Cat. Mus. Godeffroy, ho. 9, p. 31, 1884 (Samoa).

— Sauvage, Hist. Madagascar, Poiss., pp. 327, 518, 1891.

— Steindachner, Denks. Akad. Wiss. Wien, math. naturw. Kl., vol. 70, p. 495, 1901 (Honolulu).

— Beaufort, Bijdr. Dierk. Amsterdam, vol. 19, p. 132, 1913 (Saonek, Waigiu). — Weber, Siboga Exped., vol. 57, Fische, p. 398, 1913 (Lombok; Sulu; Obi major; Gesir; Ceram).

narrower line parallel along dorsal bases and below 2 others, of which lower moderately wide from eye to middle of caudal base and embracing lateral line posteriorly.

Bermuda, Cuba, Curaçao, Said to reach 200 mm.

21253 U.S.N.M. Bermuda. Dr. W. H. Jones. Length 97 mm.

33121 U.S.N.M. Cuba. Prof. F. Poey. Length 125 mm?

33124 U.S.N.M. Cuba. Prof. F. Poey. Length 123 mm?

Caranx crumenophtalmus Cuvier,
Hist. Nat. Poiss., vol. 9, p. 62,
1833 (copied).

line of large simple tubes, well exposed, each with large crenulated scale also well exposed. Scales with 11 basal radiating striae; 76 to 130 apical denticles with 1 or 2 transverse series of basal elements; ~~[illegible]~~ circuli moderately fine.

D. VII — I, 9, I, third spine 1 3/4 to 1 4/5 in head, first ray 1 2/5 to 1 1/2; A. II, second spine 2 7/8 to 3 1/5, first ray 1 3/5 to 1 2/3; caudal 1 1/10 to 1 1/4, hind edge emarginate; least depth of caudal peduncle 2 1/8 to 2 1/3; pectoral 1 2/5 to 1 1/2; ventral 1 2/3 to 1 3/4.

Brown; hardly lighter below, though some silvery areas in pale bands over abdomen. Dusky brown band along dorsal bases, begins as single dark median band on

Caranx crumenothalmus Waite, Rem. Austral. Mus., vol. 3, p. 189, 1897 (Funafuti, Ellice Islands) (error).

Caranx (Velar) crumenophthalmus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 210, 1931 (Pulu Weh; Nias; Lombok; Ambon; Obi major; Gisser; Ceram; Waigiu; Aru; Kei Islands).

predorsal, 7 or 8 rows on cheek to preopercle ridge; caudal scaly basally, fins otherwise largely naked. Scales with 8 or 9 basal radiating striae; 31 to 34 small apical denticles with 3 to 5 transverse series of basal elements; circuli moderate.

D. XV or XVI — I, 9, I or 10, I, sixth spine 2 1/4 to 2 3/5 in total head length, first ray 2 3/4; A. III, 8, I, third spine 3 to 3 1/8, first ray 2 4/5 to 2 7/8; caudal 1 1/3 to 1 1/2, deeply forked, slender lobes sharply pointed; least depth of caudal peduncle 4 to 4 1/2; pectoral 1 1/2 to 2; ventral 2 to 2 1/4.

Back pale brown, sides and below whitish, with silvery white sheen. Narrow brown band from eye above along upper side of back to origin of upper caudal lobe; above another

Trachurops crumenophthalmus Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1900, p. 501 (Hawaii). — Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 67, 1901 (reference). — Seale, Occas. Pap. Bishop Mus., vol. 1, no. 5, pp. 16, 18, 1902 (Honolulu). — Jenkins, Bull. U. S. Fish Comm., vol. 22, p. 443, 1902 (1903) (Honolulu). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 57, p. 69, Jan. 1905 (Hawaiian materials); ~~Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 187, 1903 (1905) (Honolulu; Kailua; Hilo; Hoopuloa).~~ — Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 30, 1906 (Tahiti; Rarotonga; Mukuhiva). — Steindachner, Sitzg. Ber. Akad. Wiss. Wien, math. naturw. Kl., vol. 115, pt. 1, p. 1403, 1906 (Upolu; Hawaii).

~~1563~~

depth 4 7/8 to 5 1/5; head 3 2/5 to 3 3/4, width 2 to 2 1/8. Snout 3 1/8 to 3 2/5 in head from snout tip; eye 3 1/3 to 3 2/3, greater than snout in young to 1 1/8 with age, greater than interorbital; maxillary reaches 1/8 in eye in young till opposite front eye edge with age, expansion 2 1/4 to 3 in eye, length 2 4/5 to 3; jaws with very narrow row of feeble or obsolete minute teeth; palate edentulous; interorbital 3 1/2 to 4 1/10, nearly level or with slight median depression; preopercle edge with fine serrae. Gill rakers 10 + 21, fine lanceolate, 1 1/5 in gill filaments or 1/2 of eye.

Scales with 80 to 85 in lateral line to caudal base and 20 to 25? more on latter; tubes 61 to 75 in lateral line to caudal base and 6 or 7 more on latter; 9 or 10 above, 13 or 14 below, 50 to 58

— Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 13, 1906 (1907) (Cavite). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 250, 1907 (1908) (Manila; Lubang).

— Kendall and Goldsborough, Mem. Mus. Comp. Zool., vol. 26, p. 268, 1911 (Fakarava, Tuamotus).

— Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 496 (Okinawa).

— Jordan, Tanaka, Snyder, Journ. College Sci. Tokio, vol. 33, p. 128, fig. 91, 1913 (reference).

— Herre, Journ. Sun Pac. Res. Inst., vol. 6, no. 4, p. 12, October-December 1931 (New Hebrides); vol. 7, no. 1, p. 4, January-March 1932 (Tahiti).

Case 130

Genus Inermia Poey

Inermia Poey, Mem. Hist. Nat. Cuba, vol. 2, 1861, p. 193. Type Inermia vittata Poey, monotypic.

Body elongate, fusiform, slender. Maxillary reaches to or little beyond front eye edge. Teeth feeble or obsolete. Nostril small. Scales small, 80 to 85. Dorsals separated, spines 16 or 17, rays 9 or 10. Anal spines 3, rays 8.

West Indies.

Inermia vittatus Poey

Case 129

Inermia vittata Poey, Mem. Hist. Nat. Cuba, vol. 2, 1861, p. 193. Havana.

Emmelichthys vittatus Poey, Synopsis Pisc. Cuba, 1868, p. 320.

Erythrichthys vittatus Poey, Enumerat. Pisc. Cuba, 1875, p. 49. Jordan and Fesler, Rep. U. S. Fish Comm., pt. 17, 1887 (1893), p. 528 (compiled)

— Ashina, Philippine Journ. Sci., vol. 26, no. 3, p. 369, march 1925 (Taihoku, Formosa; Giran; Bako, Pescadores Islands).

Hypereichthys vlamingii Castelnau,
Record London Internat. Exhibition 1873,
pt. 7, no. 5, p. 9 (Victoria). ½ Klunzinger,
Sitz. Ber. Akad. Wiss. Wien, math.-
naturwiss. Klasse, vol. 80, pt. 1, 1879, p. 354
(Hobson's Bay).

1342

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 140, 1935 (Bangkok).

f.² Pectoral not reaching second dorsal, less than head. Kishinoella.

e.² Lower gill rakers 21. Neothunnus.

b.² Auxinae. Body naked outside corselet; vertebrae 39, of which 19 caudal; second dorsal and anal low.

g.¹ First dorsal continuous to second.

h.¹ Lower gill rakers 22 to 28. Euthynnus.

h.² Lower gill rakers 41. Katsuwonus.

g.² Interdorsal very long, first and second dorsal widely separated, lower gill rakers 30 to 36. Auxis.

a.² Snout larger, maxillary reaches mostly beyond eye; gill rakers absent or few, 9 or 10 below; fins mostly small, caudal large.

i.¹ Scomberominae. Scales small or absent; ventrals small, very short.

Trachurops crumenophthalma

Snyder, Bull. U. S. Fish Comm., vol. 22, p. 523, 1902 (1904) (Hanalei Bay, Kauai).—

Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 230, 1905 (1906) (Samoa).

—Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 187, 1903 (1905) (Honolulu; Kailua; Hilo; Hoopuloa).

—Jordan and Richardson, Mem. Carnegie Inst., vol. 4, no. 4, p. 178, Aug. 28, 1909 (Takao, Formosa).

—Jordan and Thompson, Mem. Carnegie Inst., vol. 6, no. 4, p. 240, Sep. 1914 (Izu).

Cret 129

Diplogonotus grueli Chabanaud

Diplogonotus grueli Chabanaud, Bull. Annam coast, Mus. Hist. Nat. Paris, 1924, p. 57., Indo China; Bull. Soc. Zool. France, vol. 49, 1924, p. 253.

depth 4 3/4; head 4. Snout conic, larger than eye, equals interorbital; eye 4 1/4 in head; maxillary reaches opposite front pupil edge; mouth oblique; no teeth; preopercle finely denticulate, with spine at angle; suborbital depth 2/3 pupil diameter.

Scales 80 in lateral line; 9 above, 16 below; ctenoid; maxillary and snout naked; preopercle scaly.

D. XIII — I,10, variet XII — I,10, third and fourth spines longest - or 2/3 body depth; A. III, 10; caudal deeply emarginate, lobes pointed.

1344

Selar crumenophthalmus Fowler, Copeia, No. 58, p. 63, June 18, 1918 (Philippines); Proc. Acad. Nat. Sci. Philadelphia, vol. , 1918, p. 15 (Philippines); Copeia, No. 122, p. 82, November 20, 1922 (Hawaii); Bull. Bishop Mus., No. 22, p. 32, 1925 (Samoa); Proc. Acad. Nat. Sci. Philadelphia, vol. ~~79, 1927, p. 269 (Phil~~ 77, 1925, p. 214 (Natal); vol. 79, 1927, p. 269 (Philippines). Mem. Bishop Mus., vol. 10, p. 144, fig. 37 (young), 1928. (Honolulu; Tahiti; Rurutuhiva; Rarotonga; Polynesia; Christmas Island; Samoa; Fakarava; Society Islands; Pago Pago); ~~Mem.~~ vol. 10, No. 5, p. 326, 1931 (Honolulu); vol. 11, No. 6, p. 403, 1934 (New Hebrides; Samoa; Funafuti; Hawaii).

-Barnard, Ann. South Afr. Mus., vol. 21, pt. 2, p. 536, Oct. 1927 (Natal).-Fowler

~~1379~~

head, fourth ray 3? ; D. III, 12, I, second spine 3 1/10, first ray 2 3/4; caudal 1 1/5?, emarginate; least depth of caudal peduncle 3 2/5; pectoral 1 1/2?; ventral 1 2/3.

Brown, little paler below. Back little darker, or sprinkled with deep brown or dark dots, though general dark area of back not extending below middle of eye. Iris slate. Fins dull brown.

Ceylon, East Indies, Philippines.

56238 U.S.N.M. Bacon. Bureau of Fisheries (No. 3558). Length 47 mm.

Scomber plumieri Bloch, Naturg. Ausland. Fische, vol. 7, pt. 10, p. 77, pl. 344, 1793 (type locality, Antilles).

Scomber balantiophthalmus Schneider, Syst. Ichth. Bloch, p. 29, 1801 (~~type locality~~, on Bloch 1793)

Cave 29

Oplegnathus robinsoni Regan

Hoplegnathus robinsoni Regan, Ann. Durban Mus., vol. 1, pt. 3, 1916, p. 168. Natal. 1/27 Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, 1916, p. 348 (reference). 1/27 Barnard, Ann. South African Mus., vol. 21, pt. 2, October 1927, p. 506.

Depth 1 5/7 to 3. Eye 4, less than snout or interorbital; preopercle edge serrate; opercular spine pointed. Scales 110 in longitudinal series; interorbital space scaly.

D. XI, 21, spinous portion much less than twice long as soft portion, median spines longest, nearly 1/3 head, front rays much longest or little longer than head; A. III, 15, third spine longest, front rays longest, like soft dorsal; caudal emarginate.

1346

Caranx dubentonii Lacépède, Hist. Nat. Poiss., vol. 3, pp. 58, 71, 1802 (no type locality) (on Plumier).

Depth 2 3/4 to 3; head 2 2/5 to 2 2/3, width 2 1/10 to 2 4/5. Snout 4 to 4 1/2 in head; eye 2 4/5 to 3 1/5, greater than snout or interorbital; maxillary reaches 3/5 to 3/4 in eye, expansion 2 to 3, length 2 in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital 4 3/4 to 5 1/2, very slightly depressed; preopercle ridge entire, edge finely serrated. Gill rakers 6 + 11, of which 3 upper rudiments and others lanceolate, greatly more than gill filaments for 2 3/4 in eye.

Scales 24 in lateral line to caudal base and 4 more on latter, 2 above, 6 below, 3 predorsal, 2 rows on cheeks; head naked, except cheeks and opercles; Lateral

1347

Caranx mauritianus Quoy and Gaimard, Voy. Uranie, Zool., p. 359, 1824 (Jan. 29- May 26, 1825) (type locality, "Isle de France"). — Cuvier, Hist. Nat. Poiss., vol. 9, p. 60, 1833 (Bourbon; Mauritius; Seychelles).

Trachurops mauritianus Streets, Bull. U. S. Nat. Mus., No. 7, p. 68, 1877 (Honolulu).

Trachurops mauritiana Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, No. 2, p. 223, June 27, 1925 (Tokyo; Shizuoka; Wakanoura; Misaki) — E. K. Jordan, Proc. U. S. Nat. Mus., vol. 66, art. 33, p. 18, 1925 (Hawaii).

Selar mauritianus Jordan and Jordan, Mem. Carnegie Inst., vol. 10, No. 1, p. 38, december 1922 (note). — Wakiya, Ann. Carnegie Inst., vol. 15, p. 159, pl. 18, fig. 2, 1924 (Tokyo Bay; Kii; Iwajima; Fusan, Korea; Ryukyu; Formosa).

1576

Genus Dipterygonotus Bleeker (Cue 130

Dipterygonotus Bleeker, Journ. Indian Archipelago, vol. 3, 1849, p. 71. Type Emmelichthys leucogrammicus Bleeker, monotypic.

Body fusiform, slender, elongate. Head small. Eye moderate, little advanced. Mouth greatly protractile. No teeth minute or absent from jaws or palate. Preopercle edge weakly serrate. Lower gill rakers 22. Dorsal spines 13 to 15, rays 10 to 13. Anal spines 3, rays 10 to 12. Caudal emarginate.

Analysis of species Ektomocky

a.1 Eye 3 1/2 in head; soft dorsal rays 13, anal 12. leucogrammicus

a.2 Eye 4 1/4 in head; soft dorsal rays 10, anal 10. gruveli.

(cord 3 zonal rods

Caranx macrophthalmus Rüppell, Atlas Reise nördl. Afrika, Fische, p. 97, pl. 25, fig. 4, 1828 (type locality, Massaua, Red Sea). — Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 458, 187[illegible] (Red Sea). — Picaglia, Atti Soc. Modena, ser. 3, vol. 12, p. 30, 1894.

— Beaufort, Bijd. Dierk. Amsterdam, vol. 10, p. 132, 1913 (Naones, Waigiu).

Caranx (Selar) macrophthalmus Klunzinger, Fische Roth. Meer., vol. 1, p. 97, 1884. — Pfeffer, Jahrb. Hamburg. wissen. Anstalt., vol. 10, p. 12, 1893.

rather large basal elements; circuli moderate.

D. XIII — 9, I or 10, I, third spine 1 4/5 to 2 1/4 in total head length, second ray 2 1/4 to 2 1/2; A. III, 8, I, third spine 4 3/4, first ray 2 1/2 to 2 3/5; caudal 1 1/5 to 1 1/3, deeply forked, slender lobes well pointed; least depth of caudal peduncle 3 1/4 to 3 3/4, pectoral 1 1/2 to 1 3/5; ventral 1 7/8 to 2.

Brown above, paler below with silvery white tinge. Iris white. Fins all pale brown.

South Africa, West Australia, New South Wales, New Zealand.

48817 U.S.N.M. Tasmania. Dr. J. Douglas Ogilby. Length 107 to 115 mm. 3 examples.

Velar macrophthalmus Wakiya, Ann. Carnegie Inst., vol. 15, no. 1, p. 160, pl. 18, fig. 3, July 1, 1924 (Kagoshima; Nagasaki; Ryukyu; Bonin Islands; Formosa).

Trachurops macrophthalmus Herre, Journ. Pan. Pac. Res. Inst., vol. 6, no. 4, p. 12, October-December 1931 (New Hebrides); vol. 7, no. 1, p. 4, January-March 1932 (Tahiti).

Diptery gnotus leucogrammicus Bleeker

Diptery gnotus leucogrammicus Bleeker, Journ. Indian Archipelago, vol. 3, 1849, p. 71. Macassar; Atlas Ichth. Ind. Néerland., vol. 8, 1876–77, p. 42 (Celebes, Buro, Amboina).

Erythrichthys leucogrammicus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 396 (Amboyna; Molucca Sea). 1/2m Bleeker, Atlas Ichth. Ind. Néerland., vol. 7, 1873–76, pl. (16) 274, fig. 2. 1/2m Johnstone, Rep. Pearl Oyster Fisher. Gulf of Manaar, pt. 2, 1904, p. 221, pl. 1, fig. 6 (Chevel Paar in 7 fathoms). 1/2m Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 71 (Bulan and Balon).

Smaris balteatus Valenciennes, Hist. Nat. Poiss., vol. 6, 1830, p. 424. Ceylon. 1/2m Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 389 (compiled). 1/2m Day, Fishes of India, pt. 1, 1875, p. 94 (Ceylon); Fauna of British India, Fishes, vol. 1, 1889, p. 531.

Caranx torvus Jenyns, Voy. Beagle, Fishes, p. 69, pl. 15, 1842 (type locality, Tahiti). — Schmeltz, Cat. Mus. Godeffroy, No. 4, p. 17, 1869 (Samoa).

Selar torvus Whitley, Journ. Pan Pac. Res. Inst., vol. 3, No. 1, p. 12, January - March 1928 (Santa Cruz Islands). — Walsija, Ann. Carnegie Inst., vol. 15, p. 162, pl. 19, fig. 1, 1924 (Kwajalina & Bonin Islands). Bleeker, Nat. Tijdr. Ned. Indie, vol. 2, p. 213, 1851 (Celebes); Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 51, 1852 (Batavia).

Trachurops torva Jordan an Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 337, 1902 (Formosa; Giran). — Izuka and Matsmura, Cat. Mus. Tokyo Mus., Vertebr., p. 159, 1920 (Kagoshima).

Depth 5 1/4 to 5 7/8; head 3 1/3 to 3 2/3, width 2 1/3 to 2 2/5. Snout 3 7/8 to 4 in head from snout tip; eye 3 1/5 to 3 2/5, greater than snout or interorbital; maxillary reaches 1/4 to 1/3 in eye, expansion 1 4/5 to 2 in eye, length 2 1/3 to 2 1/2 in head from snout tip; no teeth; interorbital 4 1/8 to 4 2/5, very slightly convex; very thin preopercle edge uneven. Gill rakers 12+28, finely lanceolate, slightly longer than gill filaments or 1 3/5 in eye.

Scales 74 or 75 in lateral line to caudal base and 4 or 5 more on latter; 7 or 8 above, 14 or 15 below, 41 to 43 predorsal, 6 rows on cheek to preopercle ridge; soft vertical fins with basal scales. Scales with 6 to 8 basal radiating striae; 15 to 17 irregular moderate apical denticles, with 1 or 2 transverse series of

Caranx atun Thiollière, Fauna Woodlarks, p. 172, 1857 (type locality, Woodlark Island).

Scomber dimidiatus (Cuvier and Valenciennes) Günther, Cat. Fish. Brit. Mus., vol. 2, p. 430, 1860 (name in text; on Cuvier 1833).

Trachurops brachycheirus Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 261 (type locality, Cape San Lucas)!

~~4373~~

Cue 29

Emmelichthys nitidus Richardson

Emmelichthys nitidus Richardson, Voy. Erebus and Terror, Fishes, vol. 2, 1844, p. 47, pl. 29, figs. 7–8. West Australia. 1/m

Barnard, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 574, pl. 24, fig. 2 (Simonstown, False Bay).

Erythrichthys nitidus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 395 (New Zealand).

1/m Stead, Additions Fish Fauna New South Wales, No. 1, 1907, p. 16. 1/m Mc Culloch, Zool. Res. Endeavour, vol. 1, 1911, p. 66.

Depth 3 2/3 to 3 3/4; head 3 1/8 to 3 1/4, width 2 to 2 1/2. Snout 3 1/5 to 3 2/5 in head from snout tip; eye 3 1/10 to 3 1/5, slightly greater than to subequal with snout, greater than interorbital; adipose lids wide; maxillary reaches 1/4 to 1/3 in eye, expansion 2 to 2 2/5 in eye, length 2 1/8 to 2 1/5 in head from snout tip; interorbital 3 3/4 to 4 1/2, ~~in head~~ slightly convex. Gill rakers 10 or 11 + 21 to 26, lanceolate, 1 1/8 in gill filaments, which 1 2/3 in orbit.

Scales 50 to 57 + 40 to 42 in lateral line, arch long as straight section; acute depth 2

to $2\frac{1}{2}$ in eye.

D. I, VIII – I, I, 24, I or I, I, 25, I, third spine 2 to $2\frac{1}{4}$ in total head length, first branched ray $2\frac{1}{2}$ to $2\frac{2}{3}$; A. II – I, I, 21, I, second spine $4\frac{4}{5}$ to $5\frac{1}{5}$, first ray $2\frac{1}{2}$ to $2\frac{4}{5}$; caudal $1\frac{1}{3}$ to $1\frac{2}{5}$, forhead; least depth of caudal peduncle 6 to $6\frac{1}{3}$; pectoral $1\frac{1}{10}$ to $1\frac{1}{8}$; ventral $1\frac{9}{10}$ to 2, rays I, 5. rays II, 19

Back neutral gray, below silvery white. Fins pale, dorsals and caudal with grayish.

Red Sea, Arabia, Zanzibar, Natal, Madagascar, Bourbon, Mauritius, Seychelles, India, Nicobars, China, Riu Kiu, Formosa, Japan, Korea, Philippines, East Indies, Melanesia, Micronesia, Polynesia, Hawaii. Also in

the eastern Pacific as well as in the Atlantic.

1881, p. 343 (Port Jackson & Northern Coast). — Stead, Fishes of Australia, 1906, p. 96 (New South Wales).

Amia fasciata Bleeker, Ned. Tijdsch. dierk., vol. 2, 1865, p. 71 ( ). — Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 16 (Sydney). — Radcliffe, Proc. U. S. Nat. Mus., vol. 41, 1911, p. 249, pls. 21 and 22 (Port Jackson). — McCulloch, Biol. Res. Endeavour, vol. 3, pt. 2, 1915, p. 116 (Tasmania; New South Wales; Moreton Bay, off Port Curtis, Cairns, Murray Island, Mapoon; types of Apogon cookii Macleay).

Amia cookii Macleay, Proc. Lin. Soc. New South Wales, vol. 5, 1881, p. 344, Endeavour River and Darnley Island, Queensland.

Amia robusta Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 41, 1911, p. 254, fig. 2. Jolo Reefs, Philippines, Celebes.

24144. Alimango Bay, Burias Island. March 6, 1909. Length 128 mm.

22719. Balayan Bay, Luzon. January 19, 1908. Length 94 mm.

8420 to 8423. Bongao Anchorage, Sulu Archipelago. February 23, 1908. Length 148 to 162 mm.

9028. Bongao Anchorage. February 24, 1908. Length 143 mm.

One example. Cavite. Length 98 mm. "Hamansé" (herring).

18666, 18674. Hinunangan Bay, Leyte. July 30, 1909. Length 153 to 154 mm.

21159 to 21162. Jolo market. February 11, 1908. Length 118 to 140 mm.

11873 to 11878, 12423. Malabang market. May 22, 1908. Length 185 to 195 mm.

Cav 129

Pseudupeneus indicus (Shaw)

Mullus indicus Shaw, General Zoology, vol. 4, pt. 2, 1803, p. 611. Indian Seas. (On Rahtee goolivinda Russell, Fishes of Coromandel, vol. 2, 1803, p. 42, pl. 157, Vizagapatam).

Upeneus indicus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 406 (China). 1/m Day, Fishes of Malabar, 1865, p. 28. 1/m Günther, Journ. Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874, p. 57 (Upolu). 1/m Day, Fishes of India, pt. 4, 1875, p. 126, pl. 31, fig. 4. 1/m Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 38 (Kandavu, Fiji). 1/m Pohl, Cat. Mus. Godeffroy, no. 9, 1884, p. 27 (Ponapé). 1/m Meyer, Ann. Nov. Espan., Hist. Nat. Madrid, vol. 14, 1885, p. 16 (North Celebes). 1/m Day, Fauna British India, Fishes, vol. 2, 1889, p. 32. 1/m Thurston, Pearl Fishes. Gulf of Manaar, 1890, p. 92 (Pamban). 1/m Elera, Cat. Fauna Filipinas, vol. 1, 1895,

One example. Matnog Bay. May 31, 1909. Length 105 mm.

13972, 13973. Nato, Luzon. June 19, 1909. Length 118 to 144 mm. Four examples.

19694. Port Jamelo, Luzon. July 13, 1908. Length 110 mm.

12199. Tataan, Simalue Island. February 20, 1908. Length 154 mm.

Three examples. D. 5561. Teomabal Island (NW.), S. 36° W., 0.2 mile (lat. 5°50'45" N., long. 121°01'15" E.), vicinity of Jolo. In 10 fathoms. September 18, 1909. Length 32 to 38 mm.

6317. Kowloon market, China, September 18, 1908. Length 148 mm.

65998 U.S.N.M. Truk, Carolines. Albatross Collection 1900. Length 42 to 48 mm. 3 examples.

71676 U.S.N.M. Naha, Okinawa, Riu Kiu. Albatross Collection. Length 146 mm.

75788-9 U.S.N.M. Borneo. H.C. Raven. Length 245 & 298 mm. 2 examples.

84428 U.S.N.M. Philippine Islands. Dr. Fred Baker. Length 163 & 169 mm. 2 examples.

U. S. N. M., No. 42156. St. Vincent, Cape Verde Islands. U. S. Eclipse Expedition. Length 125 to 147 mm. Six examples.

U. S. N. M., No. 52504. Samoa. Bureau of Fisheries. Length 210 to 290 mm. Four examples.

U. S. N. M., No. 52678. Hawaiian Islands. Bureau of Fisheries (04037). Length 289 mm.

U. S. N. M., No. 55524. Honolulu. Albatross Collection. Length 280 mm.

U. S. N. M., No. 66068. Paumotus. Albatross Collection. Length 228 mm.

U. S. N. M., No. 71967. Naha, Okinawa, Riu Kiu. Albatross Collection 1906. Length 175 to 178 mm. Two examples.

U. S. N. M., No. 89039. Tahiti. J. Morgan Clements. Length 168 mm.

by Parkinson).

Centropristes tasmanicus Hombron and Jacquinot, Voyage Pole Sud, Zool., vol. 3, Poiss., 1853, p. 46, pl. 4, fig. 1.

Tasmania.

Depth 3 3/5 to 3 2/3; head 3 1/4 to 3 2/5, width 2 to 2 1/8. Snout 3 1/2 in head from snout tip; eye 5 1/5 to 5 1/3, 1 2/3 to 1 3/4 in snout, 1 3/4 to 1 4/5 in interorbital; maxillary reaches 2/5 to 3/5 in eye, expansion 1 1/3 to 1 2/5 in eye, length 2 1/4 to 2 1/3 in head from snout tip; teeth in villiform bands in jaws, on vomer and palatines; interorbital 3 to 3 1/8, broad, nearly level; preopercle edge

A. H. S. P., one example. Natal.
1922. H. W. Bell - Marley. Length 224
mm.

Arripis georgianus (Valenciennes)

Centropristes georgianus Valenciennes,

Hist. Nat. Poiss., vol. 7, 1831, p. 451.

Port Western, New Holland. — Richardson,

Ichth. Voy. Erebus and Terror, 1844-1848,

p. 117, pl. 54, figs. 3-6 (South eastern

and south western coasts of Australia,

Norfolk Island, Port Jackson, King

George's Sound).

Arripis georgianus Jenyns, Zool. Voy.

Beagle, Fish, 1840, p. 14 (King George's

Sound). — Günther, Cat. Fish. Brit.

Mus., vol. 1, 1859, p. 253. (Holdfast Bay,

South Australia; Houtman's Abrolhos;

Hobson's Bay; Port Jackson). — Bleeker,

Genus Alepes Swainson

Alepes Swainson, Nat. Hist. Animals, vol. 2, p. 248, 1839. (Type, Alepes melanoptera Swainson, monotypic.)

Hemicaranx Bleeker, Verslag. Kon. Akad. Wet. Amsterdam, Vol. 14, p. 135, 1862. (Type Caranx marginatus Schlegel, orthotypic.)

Carangops Gill, Proc. Acad. Nat. Sci. Philadelphia, 1862, pp. 430, 431, 435, (Type Caranx falcatus Holbrook, monotypic.)

Rastrum Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 509, 1904. (Type, Alepes scitula Fowler =, orthotypic.)

smaller variable spots or blotches, even to dots. Spinous dorsal membranes blackish, likewise outer or unscaled portions of all vertical fins; soft dorsal and anal large dark blotches like on body extend basally, while caudal with several rows of small dark spots. Pectoral uniformly pale brown. Ventral neutral dusky to blackish slate terminally, strewn with dark brown spots basally.

China, Japan. Reported from the Philippines by Elera, though not since verified with materials.

Atule Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, p. 38, dec. 1922. (Type Caranx affinis Rüppell, orthotypic.)

Pantolabus Whitley, Rec. Austral. Mus., vol. 18, no. 3, p. 108. March 25, 1931. (Type Caranx parasitus Garman, orthotypic.)

nostril; 27 rows across cheek. Scales with 6 to 10 basal radiating striae; 5 to 10 large, slender apical denticles, fewer in single row, more numerous row alternate; circuli rather coarse.

D. XII, 14, I, to 16, I, fourth spine 1 4/5 to 2 in head, fourth ray 1 1/4 to 1 3/5; A. III, 12, I or 11, I, second spine 2 1/2 to 2 4/5, fourth ray 1 1/2 to 1 3/4; caudal 1 1/4 to 1 1/3, hind edge very slightly concave as contracted, truncate as expanded, little convex in young; least depth of caudal peduncle 2 2/3 to 2 3/5; pectoral 1 2/5 to 1 3/5; ventral 1 1/4 to 1 1/3.

Pale brown generally, marked all over head and body with dusky to blackish brown rounded spots, larger and less numerous in young; with age spots more irregular, often as rings, arcs and interspaces with

Body ellipsoid, fusiform, compressed
Head small compressed. Snout
short, convex. Eye large or small,
advanced in head, with broad
adipose lid behind. Maxillary
very narrow; or little expanded,
end scarcely $\frac{1}{4}$ of eye, reaches
to or below front of eye.
Teeth uniserial in jaws, few
or absent from vomer and
palatines. Lower gill rakers 20
to 30. Shoulder girdle without
deep cross furrow inside gill
opening. Conspicuous basal scaly
sheaths to dorsal and anal
fins. Lateral line strongly arched
in front, with numerous small
scutes in posterior straight
section. Dorsal and anal fins
low anteriorly, not falcate. No
finlets. Anal but little shorter

than soft dorsal. Caudal deeply forked. Pectoral long, falcate. Ventral small, inserted below pectoral bases.

Small, trim, compact tropical crevalles, differing from Caranx principally in their narrow or slender maxillary.

Analysis of Species

a.' Lower gill rakers 19 to 32.

b.' Alepes. Last dorsal and anal rays not filiet like or little separated from preceding rays.

c.' Lateral line anteriorly strongly arched to below soft dorsal origin, straight section with 50 to 60 scutes.

d.' Scutes 60, widest 8 in body depth; straight section of lateral line less than twice arch; maxillary ends before eye; ventral profile subcarinate.

maerura.

d.^{2} Scutes 48 to 56, widest 9 to 10 in body depth; straight section of lattral line about twice arch; maxillary ends below front part of eye; ventral profile subcarinate.

melanoptera.

d.^{3} Scutes 58, widest 4 in body depth;

straight section of lateral line twice arch; maxillary reaches $\frac{1}{3}$ in eye.

djedaba.

c.^{2} Lateral line anteriorly moderately arched to below fourth to sixth dorsal rays, arch twice shorter than straight section with 40 to 60 scutes.

e.^{1} Width of scutes 6 to 7 in body depth; ventral profile much more convex and trenchant; maxillary reaches $\frac{1}{3}$ in eye. balla.

e.^{2} Width of scutes 4 in body depth; ventral and dorsal profiles evenly convex; maxillary reaches slightly beyond front eye edge. megalaspis.

b.^{2} Atule. Last dorsal and anal rays finlet like and little separated from preceding rays. male.

a.^{2} Branchiale spex. Lower gill rakers 50. tabulae.

1364

Alepes macrura (Bleeker)

Selar macrurus Bleeker, Nat. Tijds. Ned. Indie, vol. 1, p. 359, (355)
1850 (type locality, Batavia); Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 52, 1852 (Batavia); Act. Soc. Sci. Ind. Neerl., vol. 1, no. 3, p. 9, 1856 (Macassar).

Follow—Incl Caps
Leaded

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304

Sparus megalommatus (Klunzinger)

Pagrus megalommatus KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 20, 1870, p. 702, Red Sea. (type locality:

Sparus (Pagrus) megalommatus KLUNZINGER, Fische Roth. Meer., 1884, p. 43, pl. 4, fig. 3, 1884.

Depth $2^1/_6$; head 3. Snout $2^1/_4$ in head; eye $3^4/_5$, $1^9/_{10}$ in snout, $1^1/_2$ in preorbital depth; maxillary reaches $^1/_3$ in eye, length $2^1/_2$ in head, greater than eye; 4 conic canines in front of each jaw; outer row of conic teeth in each jaw laterally, with inner row of fewer small obtuse teeth, their bases at least but little larger than those of jaw teeth; interorbital low;

1365

Caranx macrurus Günther, Cat. Fish. Brit. Mus., vol. 2, p. 434, 1860 (copied).

we believe them all to be due to preservation or variously intensified or rendered pallid, according to the condition of the specimens as they were collected.

1366

Caranx (Selar) maeruus Weber and Beaufort, Fish. Indo Austral. Archip., vol. 6, p. 213, 1931 (copied).

There seems to be little excuse to us for the erection of the nominal Apogonichthys waikiki, Fox fo and Fox vailuae. An examination and comparison of the types shows that all three are the same species. Although there are some slight differences in Bleeker's figure of Apogonichthys perdix there is but little doubt that it is the same species, which is widely distributed over the Indo-Pacific. Bleeker shows 3 rows of scales on the cheek, libels an error of his artist. The figures of Fox fo and Fox vailuae fail to indicate any scales on the cheek though the types both show the scale pockets distinctly. Ler for the description of the color and its resulting patterns,

1367

Alepes glabra Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 507, pl. 12, lower fig., 1904 (type locality, Padang, Sumatra).

Cuv 179 Mulloidichthys erythrinus (Klunzinger)

Mullo[illegible]des erythrinus Klunzinger, Fische Roth. Meer., 1884, p. 50 (on Mulloides ruber Klunzinger). 1/m Steindachner, Denksch. Akad. Wiss. Wien, math.-naturwiss. Classe, vol. 70, pt. 1, 1901, p. 485 (Laysan). 1/m Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 234 (compiled).

Mulloides ruber (not Lacépède) Klunzinger, Verhandel. zool. botan. Gesellsch. Wien, vol. 20, 1870, p. 743 (Kosseir, Red Sea). 1/m Günther, Journ. Mus. Godeffroy, vol. 1-3, pts. 5-6, 1874, p. 56, pl. 43, fig. A (Tahiti). 1/m Schmeltz, Cat. Mus. Godeffroy, no. 7, 1879, p. 40 (Tahiti). 1/m Pöhl, Cat. Mus. Godeffroy, no. 9, 1884, p. 27 (Tahiti).

Depth 2 9/10; head 3 3/4, width 2. Snout 4 in head from snout tip; eye 3 4/5, little greater than head, 1 1/2 in interorbital; maxillary reaches eye, expansion 3 1/2, length 3 1/6 in head from snout tip; interorbital 3 1/8, broad, elevated. Gill rakers 7+21, pointed, 2 in eye.

Scales 44+62 in lateral line, arch 2 in straight section; 13 scales above, 8 below. Breast densely scaled. Scutes small, deepest 9 in body depth.

D. I, VIII — I, 26, fourth spine 2 4/5 in total head length, first ray 2 1/2; A. II, — I, 22, first ray 2 1/3; least depth of caudal peduncle 5 1/2; ventral 2 2/5; upper caudal lobe 2 7/8 in rest of

body; pectoral $3\frac{1}{5}$.

Slate gray above, lower sides and under surface silvery white. Large gray blotch on opercle. Snout and head above tinted with brown. Dorsals and caudal gray, spinous dorsal and inner margin of caudal dusky. Soft dorsal and anal with grayish longitudinal band, median on fin rays, then submarginal. Pectoral pale gray. Ventral whitish.

East Indies.

A.N.S.P., No. 27502. Padang, Sumatra. A.C. Harrison and H. L. Hiller. Length 213 mm. Type of Alepes glabra.

Alepes melanoptera Swainson

Alepes melanoptera Swainson, Nat. Hist. Animals, vol. 2, p. 248, 1839 (on Wori parah Russell, Fishes of Coromandel, vol. 2, p. 40, pl. 155, 1803, type locality, Vizagapatam).
— Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 507, 1904 (Padang, Sumatra); Proc. Acad. Nat. Sci. Philadelphia, (1905 (April 7), p. 70, (Padang specimen); vol. 79, (1927), p. 269, (Philippines).

denticles, with 15 to 17 transverse series of basal elements; circuli fine.

D. XI, 11, I, seventh spine 2 in head, first ray 2 1/2; A. III, 10, I, third spine 4 second ray 2 1/2; caudal 1, deeply emarginate; least depth of caudal peduncle 3; ventral 1 3/5; pectoral 3 in combined head and body to caudal base.

Gray brown generally. Iris slaty. Dorsals, anals and ventrals dusky or darker than body color. Pectoral axil neutral dusky.

Cape Colony, Natal.

53031 A.N.S.P. Natal. H.W. Bell Marley. 1927. Length 305 mm.

Selar malam Bleeker, Nat. Tijd. Ned. Indie, vol. 1, (355) p. 362, 1850 (type locality, Batavia); vol. 2, p. 471, 1851 (Rio); vol. 3, p. 445, 1852 (Banka); Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 5, 1852 (Batavia); Act. Soc. Sci. Ind. Neerl., No. 7, vol. 5, p. 2, 1858-9 (Sinkawang, Borneo); Verslag. Akad. Wet. Amsterdam, vol. 12, p. 31, 1861 (Singapore).

Gunther, Cat. Fish. Brit. Mus., vol. 2, p. 434, 1860 (copied).—

Caranx malam Bleeker, Ned. Tijds. Dierk., vol. 2, p. 173, 1865 (Siam; copied); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 293, 1868 (Rio, Bintang); Ned. Tijds. Dierk., vol. 4, p. 116, 1874 (China), p. 131 (reference).

— Kner, Reise Novara, Fische, p. 154, 1865 (Java).—

Depth 2 1/5; head 3 1/3, width 2. Snout 3 in head; eye 3 2/3, 1 1/5 in snout, 1 1/6 in interorbital; maxillary reaches 4/5 to eye, expansion 2 1/8 in eye, length 3 1/8 in head; teeth with outer rows 5 or 6 irregularly; no teeth on tongue or palate; interorbital 3 in head convex; preopercle edge entire. Gill rakers 10? + 15, lanceolate, 1 1/4 in gill filaments, which 1 1/3 in eye.

Scales 76 in lateral line to caudal base and 5 more on latter; usually 2 short tubes on each scales; 12 scales above lateral line, 20 below, 30 predorsal; 8 rows on cheek, with broad preopercle flange naked; muzzle, interorbital and ocular rim naked. Scales with 6 to 8 basal radiating striae; 50 to 76 apical

— Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, p. 600, 1912 (Batavia).

— Weber, Siboga Exped., vol. 57, Fische, p. 397, 1913 (Macassar).

— McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 131, pl. 22, April 21, 1915 (paratype of Caranx nigripinnis; 3 to 7 miles N. 42° E. of Double Island Point, Queensland; 11 to 14 miles N. 50° W. of Piné Peaks, Queensland; 24-32 fathoms); Austral. Mus. Mem., no. 5, pt. 2, p. 188, Sep. 10, 1929 (reference)

14844. Alimango Bay, Burias Island.
March 5, 1909. Length 93 mm.

20489. Bataan Island. June 5, 1909.
Length 74 mm.

23280 to 23282, 23435 to 23438, 23465 and
23466. Biri Channel. June 1, 1909.
Length 67 to 99 mm.

14910, 14911, 23463, 23464. Biri Channel.
June 2, 1909. Length 86 to 94 mm.

11 examples. Biri Channel. June 2,
1909. Length 65 to 102 mm.

17029 to 17031. Bisucay Island near
Cuyo Island. April 9th, 1909. Length 93-
98 mm. Type (17030 Bureau of Fisheries)
68,398, U. S. N. M.

Caranx (Atule) malam Iwatsuja, Ann. Carnegie Mus., vol. 15, p. 200, pl. 29, fig. 3, 1924 (Formosa).

Caranx (Selar) malam Weber and Beaufort, Fish. Indo Austral. Archip., vol. 6, p. 213, 1931 (Bagan Api Api; Batavia; Tandjong Priok; Macassar).

or dorsal less marked or only
deeply colored posteriorly, at
which point both extend outward
on first, upper and lower caudal
edges slightly narrowly. Paired fins
uniformly pale.

soft dorsal also with dark front margin;

East Indies, Philippines. Allied
with Amia fasciata (White) and
its allies, but differs chiefly in the
presence of but 6 dorsal spines.

1374

Atule malam Herre, Hong Kong Naturalist, Suppl., No. 3, p. 29, February 1934 (Hong Kong).

Pachymetopon gibbosus Pellegrin,
Bull. Soc. Zool. France, vol. 39, 1914,
p. 264. Fort Dauphin, Madagascar.

Caranx nigrescens Day, Proc. Zool. Soc., London, ~~1867~~, p. 704, ~~pl. 50, fig. 1~~ 1867, (type locality, near Madras).

Caranx nigripinnis Day, Fishes of India, pt. 2, p. 225, pl. 51, fig. 5, 1876 (type locality, Madras; Andamans); Fauna British India, vol. 2, p. 168, 1889.

Caranx latus (not Agassiz) Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 67, 1901 (reference).

Cuvier 29

Pachymetopon grande Günther

Pachymetopon grande Günther, Cat. Fishes British mus., vol. 1, 1859, p. 424. No locality; Introd. Study of Fishes, 1880, p. 406 (name only); Ann. Mag. Nat. Hist., series 5, vol. 18, 1886, p. 367 (note on type, said to be from Cape of Good Hope; figure not published).

1/m Thompson, Marine Biol. Rep. South Africa, No. 4, 1918, p. 86. 1/m Barnard, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 636 (compiled). +/m Fowler, Annals Natal Mus., vol. 6, pt. 2, May 1929, p. 259, text fig. 1 (Natal).

Pachymetopon günther Steindachner, Sitz. Ber. Akad. Wiss. Wien, Math.-Naturw. Classe, vol. 50, pt. 1, 1870, p. 135. Cape of Good Hope. 1/m Thompson, Marine Biol. Rep. South. Africa, No. 4, 1918, p. 86.

Depth 2 1/2 to 2 9/10; head 3 1/4 to 3 1/3, width 1 9/10 to 2 2/5. Snout 3 1/2 to 3 3/4 in head from snout tip; eye 3 2/3 to 4 1/8, 1 1/8 to 1 1/5 in snout, 1 2/5 to 1 3/5 in interorbital, hind adipose lid covers 1/3 of eye posteriorly; maxillary reaches to or 1/8 in eye, expansion 2 4/5 to 3 in eye, length 2 2/3 to 3 in head from snout tip; interorbital 2 1/3 to 3, broadly convex. Gill rakers 6 to 9 + 19, lanceolate, 1 1/2 in gill filaments, which 1 3/4 in eye.

Scales 33 to 38 + 52 to 55 in lateral line, arch 2 1/2 in straight section, acute depth 2 1/2 in eye; 15 or 16 scales above, 27 below.

D. I, VIII — I, I, 21 to I, I, 23, fourth spine 2 1/3 to 3 in total head length, first branched ray 2 to 2 1/5; A.

II — I, 19 or 20, second ray 2 1/5 to 2 1/3; caudal 1 1/5 to 1 1/4, deeply emarginate; least depth of caudal peduncle 3 2/3 to 5 1/2; ventral 2 2/5 to 2 1/2; pectoral rays II, 17 or 18, fin 3 1/4 in fish without caudal.

Back gray brown or drab, sides and below silvery white. Dark shade on opercle above posteriorly, though not distinct as spot. Iris whitish. Spinous dorsal blackish. Soft dorsal and caudal brownish, other fins whitish.

Andamans, Malaya, India, " East Indies, Philippines, Siam, " China, " Japan, Queensland. " Formosa,

One example. Lingayen Gulf, east of Pt. Gueeet, west coast of Luzon. May 11, 1909. Length 73 mm.

head; eye 6, 1 3/5 in snout; maxillary reaches 7/8 in eye, expansion 1 1/3-in eye, length 2 3/5; jaws even; outer row of teeth slightly enlarged; interorbital 3 3/5, moderately high; preopercle edge weakly denticulate.

Scales 53 in lateral line; 106 along above lateral line to caudal base, 84 along below; 10 or 11 above, 25 below. (Figure shows 12 above anal origin); soft dorsal and anal scaleless; caudal largely covered with fine scales basally.

D. X, I, 32, third spine 2 4/5 in head, first ray 4 2/5; D. II, 7, second slender spine weak, 4 4/5 in head or 2 4/5 in postocular, second ray 2 2/5; caudal 1 4/5, little emarginate behind; least depth of caudal peduncle 3 3/5; pectoral 1 1/3; ventral 1 4/5.

Body gray violet with silvery sheen

1379

U. S. N. M., No. 72604. Java. O. Bryant and W. Palmer. Length 175 mm. As Caranx malam.

A. N. S. P., No. 27501. Padang, Sumatra. A. C. Harrison and H. L. Hiller. Length 125 mm.

A. N. S. P., one example. Philippines. 1923. Rev. Joseph Clemens. Purchased. Length 112 mm.

Leaded
Follow Lead Caps 134789 1 1 2

Scales 48 (figure shows 56) in lateral line to caudal base; (5 above, 14 below; predorsal scales forward opposite eye).

D. X, 9, fourth spine $2^{1}/_{3}$ in head, first ray $2^{3}/_{4}$; A. III, 9, second and third spines subequal, $2^{7}/_{8}$ in head, first ray $2^{7}/_{8}$; caudal $1^{1}/_{4}$, little emarginate; least depth of caudal peduncle $2^{2}/_{3}$; pectoral $1^{1}/_{10}$; ventral 2.

Yellowish, with silvery reflections. Head brown. Gorge and fins rosy. (Sauvage.)

Bourbon, Delagoa Bay. The type, obtained by Gaimard, was 175 mm. long. Sauvage says this species is characterized by the short snout and the convex front profile above the eye.

Lethrinus caeruleus Valenciennes

Lethrinus caeruleus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 301. (Seychelles. - SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, p. 202, pl. 21, fig. 3 (type).

Depth $2^{3}/_{5}$; head $2^{4}/_{5}$, upper profile little convex just before eye. Snout $1^{4}/_{5}$ in head; eye $3^{7}/_{8}$, $2^{1}/_{8}$ in snout, maxillary reaches $^{3}/_{4}$ to eye, length $2^{4}/_{5}$ in eye; teeth as 4 moderate canines apparently in front of each jaw as shown on figure followed by 4 or 5 similar conic teeth; molars somewhat stronger above than below; interorbital low, little convex, greater than eye.

Scales 54 in lateral line to caudal base on figure; 6 above, 16 below; predorsal scales extend forward opposite hind eye edge.

D. X, 9, third spine $3^{1}/_{8}$ in head, third ray $2^{2}/_{5}$; A. III, 8, I, third spine 3, first ray $2^{7}/_{8}$; caudal $1^{2}/_{5}$, truncate; least depth of caudal peduncle $2^{7}/_{8}$; pectoral $1^{1}/_{5}$; ventral $1^{7}/_{8}$.

1380

Alepes djedaba (Forsk.)

Scomber djedaba Forsk., Descript. Animal., pp. 12, 56, 1775 (type locality, Lohaja, Red Sea; Djidda; ~~Red~~ Suez). — Bonnaterre, Tabl. Ichth., p. 142, 1788 (Red Sea). — Walbaum, Artedi Pisc., vol. 3, p. 219, 1792 (copied).

Hoplegnathus maculosus Richardson,
Ichth. China Japan, 1846, p. 247. Sea of
China; Canton.

Depth 1 3/4 to 1 4/5; head 2 4/5 to 3, width
2 to 2 2/5. Snout 2 4/5 to 3 in head; eye
4 to 4 1/2, 1 1/5 to 1 3/4 in snout, 1 to 1 2/5
in interorbital; maxillary reaches below
second nostril, length 3 to 3 1/5 in head;
34 rows of tile like fused teeth, forming
rough cutting edge, developed along
each dental margin; interorbital 3 1/4
to 4, convex; preopercle edge with fine
blunt serrae. Gill rakers 7+15, lanceolate,
2 1/8 in gill filaments, which 1 1/3 in eye.

Scales 108 to 110 along lateral line to
caudal base; tubular scales 80 to 82 in
lateral line to caudal base, 34 scales
above lateral line, 50 below, 40
predorsal extending forward to occiput
and 21 more forward opposite hind

Caranx djeddaba (Günther, Cat. Fish. Brit. Mus., vol. 2, p. 432, 1860 (Penang Sea).

— Schmeltz, Cat. Mus. Godeffroy, No. 1, p. 9, 1864 (South Sea).

Rüppell, Atlas Reise nördl. Afrika, Fische, p. 97, pl. 25, fig. 3, 1828 (Red Sea).

— Cuvier, Hist. Nat. Poiss., vol. 9, p. , 1833 (Java).

— Playfair, Fishes of Zanzibar, p. 59, 1866 (Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 458, 1871. (Red Sea).

— Day, Fishes of India, pt. 2, p. 218, pl. 49, fig. 3, 1876.

Cur'ry Oplegnathus punctatus (Schlegel)

Icarodon punctatus Schlegel, Fauna Japonica, Pisc., pts. 5-6, 1844, p. 91. Nagasaki.

Hoplegnathus punctatus Günther, Cat. Fishes Brit. Mus., vol. 3, 1861, p. 358 (China). 1 m

Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 533 (Luzon, Cavite).

Richardson, Ichth. China Japan, 1846, p. 247 (South Japan and China). 1 m

Hoplognathus punctatus Ishikawa and Matsuura, Prelim. Cat. Fishes Mus. Tokyo, 1897, p. 34.

Oplegnathus punctatus Jordan and Fowler, Proc. U.S. Nat. Mus., vol. 25, 1902, p. 777 (Tokyo, Misaki, Wakanoura, Kobe, Nagasaki). 1 m

Izuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., 1920, p. 147 (Bochin). 1 m Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929. (1930), p. 649 (Wakanoura).

1382

— 9

— Duncker. Mitteil. naturh. Mus. Hamburg, vol. 21, p. 156, (1904) (Penang).

latter, 2 above, 6 below, 4 or 5 predorsal;
2 rows on cheek. Tubes in lateral line
large, simple, well exposed, each
with small basal scale; scales with
1 to 12
basal radiating striae; 80 to 125 apical
denticles with 1 or 2 transverse series
of basal elements; circuli fine.

D. VII — I, 9, I, third spine 1 1/5 to 2 in
total head length, first branched ray
1 1/5 to 1 1/4; A. II, 9, I (spines abnormally
absent); second spine 2 1/3 to 2 3/4, first
branched ray 1 3/4 to 1 7/8; caudal 1 1/8 to 1 1/4,
little emarginate behind, least depth
of caudal peduncle 1 7/8 to 2; pectoral
1 1/4 to 1 1/3; ventral 1 1/2 to 1 3/5.

Pale brown generally, slightly lighter

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 65, 1906 (1907) ("Philippines"). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 250, 1907 (1908) (Manila).

— Fowler, Copeia, no. 58, p. 63, June 18, 1918 (Philippines). — Fowler, Journ. Bombay Nat. Hist. Soc., vol. 30, no. 2, p. 316, January 25, 1925 (Bombay); vol. , p. 6, November 1926 (Bombay); Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 270 (San Fernando; Orani; Orion, Philippines); Mem. Bishop Mus., vol. 11, no. 5, p. 326, 1931. (reference).

— Hora, Mem. Roy. Asiatic Soc. Bengal, vol. 6, p. 485, 1924 (Singgora).

Vilvoy, with 5 black subvertical cross-bands, first through eye, last at caudal base, which fin with black edge. Length 150 mm.

(Barnard.)

Natal.

— ~~Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 379, March 1925 (Tainan and Taihoku).~~

— Vinciguerra, Ann. Mus. Civ. Stor. Nat. Genova, ser. 3, vol. 10, p. 562, Aug. 23, 1926 (Tarawalo).

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 546, Oct, 1927 (Natal; Delagoa Bay).

Amia compressa Smith and Radcliffe

Amia compressa Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 41, 1911, p. 246, pls. 20-21. Port Matalvi, west coast of Luzon; Quinalasag Island, east coast of Luzon; Philippines; Borneo; Moluccas.

Amia fasciata compressa McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, 1915, p. 118 (Malay Archipelago and Bougainville Island, Solomons).

Caranx djedaba Károli, Termesz. Füzetek, Budapest, vol. 5, f. 160, 1881 (Singapore). — Day, Fauna British India, Fishes, vol. 2, f. 158, 1889. — Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, f. 599, 1912 (Batavia). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, f. 150, 1934 (Bangkok), f. 444 (Durban, Natal).

Follow—Incl Caps
Loaded

Scales 41 to 48 in lateral line to caudal base and 6 to 11 more on latter; 6 to 8 above, 12 to 14 below, 18 to 25 predorsal forward opposite middle of eye; 6 rows on cheek; suprascapula entire. Scales with 11 to 13 basal radiating striae; 12 to 90 weak apical denticles, with 6 or 7 distinct transverse series of basal elements; circuli very fine.

D. XI or XII, 10, I or 11, I, spines strong, third 2 to $2^1/_8$ in head, first ray $2^1/_4$ to $2^3/_5$; A. III, 8, I, second spine enlarged, length $1^2/_3$ to 2, first ray $1^7/_8$ to $2^1/_5$; caudal $1^1/_5$ to $1^1/_3$, deeply forked; least depth of caudal peduncle $2^1/_2$ to $2^4/_5$; ventral $1^1/_3$ to $1^2/_5$; pectoral $2^1/_2$ to 3 in combined head and body to caudal base.

Brown over back and above; head, belly, and under surface of tail white. Iris gray. Suprascapular region and upper hind part of opercle dusky brown. Dorsals, caudal, and pectoral brownish, membranes of fins terminally neutral dusky to blackish, more broadly so on spinous dorsal. Anal and ventral whitish.

Red Sea, Arabia, India, East Indies, Philippines, Indo China, Riu Kiu, Japan, Korea.

No. 22620 U.S.N.M. Kadzusa, Japan. Japanese Government. Length, 153 mm.

No. 45269 U.S.N.M. Yuensan, Corea. P.L. Jouy. Length, 41 to 54 mm. (4) examples.

□ As Sparus schlegeli.

No. 45270 U.S.N.M. P.L. Jouy. Length, 144 mm.

No. 45913 U.S.N.M. Tokyo. Albatross collection. Length, 140 mm.

No. 49512 U.S.N.M. Tokyo. Albatross collection. Length, 80 to 84 mm. (2) examples.

No. 49515 U.S.N.M. Tokyo. Albatross collection. Length, 146 mm.

No. 57518 U.S.N.M. Yokohama. Albatross collection. Length, 143 mm.

No. 57545 U.S.N.M. Yokohama. P.L. Jouy. Length, 138 mm.

No. 72087 U.S.N.M. Nafa, Okinawa, Riu Kiu. Albatross collection, 1906. Length, ♂ 163 mm.

1386

Caranx (Selar) djeddaba Klunzinger,
Fische Roth. Meer., vol. 1, p. 97, 1884.

Caranx (Selar) djedaba Weber and
Beaufort, Fish. Indo-Austral. Archip.,
vol. 6, p. 214, 1931 (compiled).

Depth 2 2/5 to 2 3/5; head 2 2/5 to 2 4/5, width 1 7/8 to 2. Snout 4 to 5 in head from snout tip; eye 2 1/2 to 2 7/8, much greater than snout or interorbital; maxillary reaches opposite eye center, expansion 2 3/5 to 2 3/4 in eye, length 1 7/8 to 2 in head; teeth minute, in villiform bands in jaws, on vomer and palatines; interorbital 3 1/4 to 4, nearly level; preopercle ridge entire, edge finely denticulate; preorbital entire. Gill rakers 8+19, lanceolate, little longer than gill filaments or 2 1/4 in eye.

Scales 23 or 24 to caudal base (in lateral line) and 4 or 5 more on

1387

Carany (Atule) djeddaba Wabuya, Ann. Carnegie Mus., vol. 15, p. 199, pl. 29, fig. 1, 1924 (Ryukyus, Formosa).

13672, 23459 to 23462. Limbe Strait, Celebes. November 10, 1909. Length 65 to 76 mm.

23969, 23970, 23972. Limbe Strait. November 11, 1909. Length 57 to 85 mm.

2 examples. Makasser Island, Celebes. December 16, 1909. Length 29 to 35 mm.

13834, 13835, 23111, 23112, 23291, 23634, 24008. Powati Harbor, Makyan Island, Molucca Passage. November 28, 1909. Length 74 to 93 mm.

1388

Selar djeddaba Bleeker, Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 75, 1861 (reference). — Ishima, Philippine Journ. Sci., vol. 26, No. 3, p. 379, March 3, 1925 (Tamán and Taihoku, Formosa).

below, also with brassy on sides and abdomen. Head often little more brownish than body and bright reflections on opercle. Iris pale yellowish to brownish, with neutral gray to slaty. Head and body with 6 broad blackish brown longitudinal bands; uppermost begins at middle of interorbital, extends along predorsal, each side of dorsal bases and along upper surface of caudal peduncle medially; second band greatly broader, bifurcate anteriorly and fusing ~~with~~ below spinous dorsal; third band similarly broad, from eye to middle of caudal base; fourth band from

1389

Scomber albus Gmelin, Syst. Nat. Linnaeus, pt. 1, p. 1334, 1789 (on Forskål) .— Schneider, Syst. Schth., p. 31, 1801 (copied).

little below eye, narrower than
2 above, includes pectoral base then
to ~~middle of~~ bases of lower caudal
rays; fifth and sixth bands paler,
and successively narrower, along lower side
of abdomen till above anal fin.
Bifurcation of second longitudinal
band often appears broken below
front of spinous dorsal in lower
branch. Bands also break as several
small spots at caudal base. Fins
all pale brownish; spinous dorsal
with diffuse dusky brown oblique
bar from origin to behind end of
third spine; soft dorsal and anal
with basal dusky streaks, upper

Caranx vari ~~Valenciennes~~ Cuvier, Hist. Nat. Poiss.; vol. 9, p. 48, 1833 (type locality, Pondicherry). — Cantor, Journ. Asiatic Soc. Bengal, Vol. 18, pt. 2, p. 1107, 1849 (1850) (Pinang Sea).

Selar vari Bleeker, Verh. Batavia. Genoot. (Nat. Schth. Bengal), vol. 25, p. 44, 1853 (reference).

77754 U.S.N.M. Lobos de Afuera, Peru. Dr. R. E. Coker. Length 39 mm.

77706 U.S.N.M. Peru. Dr. R. E. Coker. Length 210 mm.

Depth 2 7/8 to 3 2/3; head 3 to 3 4/5, width 1 4/5 to 2 1/6. Snout 2 2/3 to 3 3/4 in head from snout tip; eye 3 1/3 to 5, 1 to 1 2/5 in snout, 1 to 1 2/5 in interorbital, hind adipose lids broad; maxillary reaches 1/4 to 1/3 in eye, expansion 1 2/3 to 2, length 2 1/3 to 2 7/8 in head from snout tip; interorbital 3 to 3 1/4, convex. Gill rakers 11 to 14 + 28 to 30, lanceolate, equal gill filaments or 1 1/2 to 1 7/8 in eye.

Scales 32 to 47 + 43 to 48 in lateral line; arch 2 to 2 1/5 in straight section; 11 scales above, 21 to 23 below; acute depth 1 to 1 3/5 in eye. Chest and breast finely scaled. Scales with 60 to 70 circuli, median axis mostly complete.

D. I, VIII — I, 23, I to 25, I, third spine 2 1/3 to 2 2/3 in total head length, first ray 1 1/2 to 2; A. II I, 18, I to 20, I, first ray 2 1/6 to 2 3/5; caudal forked; least depth of caudal peduncle 5 to 6 3/4; ventral 1 7/8 to 2 1/8; pectoral 3 1/3 to 3 3/5 in fish without caudal.

Back olive or brown, sides and below silvery white. Gray black blotch little smaller than eye on opercle above and slightly reflected on gill opening or not. Fins pale, dorsal and caudal gray terminally.

Red Sea, Arabia, Zanzibar, Portuguese East Africa, Natal, Madagascar, India, Andamans, Malaya, Siam, East Indies, Philippines, Tonkin, Formosa, Riu Kiu, Hawaii, China,

The Aton example 5377 has very narrow scutes, depth 10½ in body depth, 50 in straight section of lateral line, which begins opposite base of first branched dorsal ray and arch 2⅛ in straight section. Snout obtuse. Lower gill rakers 20. depth 2⅓. Pectoral broad, 1⅕ in head, rays II, 19. Seven dark transverse bands on back or mostly above lateral line. Black spot large as pupil on opercle. First dorsal blackish.

8859. Catbalogan, Samar. April 15, 1908. Length 140 mm.

8820 and 8821. Maculabo Island. June 13, 1909. Length 350 to 385 mm.

11528. Malampaya Island, Palawan. December 26, 1908. Length 214 mm.

20415, 20417, 20418, 20422. Malampaya River, Palawan. December 26, 1908: Length 122 to 155 mm.

7910. Manila market. March 17, 1908. Length 134 mm.

9059, 9062, 9063, 13680. Manila market. June 24, 1908. Length 80 to 135 mm.

9265. Manila market. July 10, 1908. Length 182 mm.

19765, 19766 [1530]. Manila market. January 20, 1909. Length 135 to 165 mm.

inner lower row; interorbital low; preorbital depth much less than eye; preopercle edge denticulate.

Scales 60? in lateral line to caudal base; 6 above (figure shows 7 rows above anal origin); caudal base with fine scales, soft dorsal and anal with low basal scaly sheaths, fins otherwise naked..

D. X, I, 28 or 29, second spine 2 in head, length, first ray 2 7/8; A. II, 7 or 8, second spine robust, 2 2/5 in head or 1 1/3 in postocular; caudal 1 1/5, cuneate; least depth of caudal peduncle 3 3/4; pectoral 1 2/5; ventral 1 1/2.

Above bluish or greenish gray, sides and below silvery. Iris yellowish. Fins yellowish. Length 72 to 90 mm. (Bleeker.)

Siam, East Indies, Indo-China. Bleeker had but two small examples.

7636 to 7638. Mouth of Malampaya River, vicinity of Luzianao. December 26, 1908. Length 242 to 260 mm.

5374, 5376, 5377. Aton market, Iloilo. March 30, 1908. Length 120 to 135 mm.

D. 5263. Point Origon, N. 85° E., 28.3 miles (lat. 12° 38' 30" N., long. 121° 37' 30" E.), off eastern Mindoro. June 4, 1908. Length 28 mm. depth 1 7/8.

8851. San Miguel Bay, west side anchorage. June 15, 1909. Length 257 mm.

17543. Sorsogon market. March 12, 1909. Length 164 mm.

5603, 5608 to 5601, 6726, 6727, 9049, 9050. Tacloban market. July 25, 1909. Length 144 to 258 mm.

A1002. No locality given. Length 152 mm.

Cuv 179

Johnius plagiostamus (Bleeker)

Corvina plagiostoma Bleeker, Naturk.

Tijdschr. Nederland. Indië, vol. 1, 1850, p.

100. Madura Straits near Surabaya and

Kammal. 1/m Günther, Cat. Fishes Brit.

Mus., vol. 2, 1860, p. 303 (compiled). 1/m

Schmelt., Cat. Museum Godeffroy, No. 4,

1869, p. 16 (Saigon); No. 7, 1879, p. 44 (Saigon).

1/m Pöhl, Cat. Mus. Godeffroy, No. 9, 1884, p. 30 (Saigon).

Pseudosciaena plagiostoma Bleeker, Verhandel.

Kon. Akad. Wetensch. Amsterdam, p. series 3,

vol. 14, 1874, p. 31 (Singapore, Java, Madura);

Atlas Ichth. Ind. Néerland., vol. 9, 1877, pl.

(2) 385, fig. 1.

Depth 3 2/3; head 3 2/3, width 2. Snout 4 3/4

in head from snout tip; eye 3 (3 7/8 on figure),

greater than snout, equals interorbital;

maxillary reaches opposite hind eye edge,

expansion at last 3/4 of eye, length 2 in head;

lower jaw slightly longer; teeth villiform,

outer row above little enlarged, biserie

1839. D.5314. China Sea in vicinity of Hong Kong (lat. 21°41'N., long. 116°46'E.). On 122 fathoms. November 5, 1908. Length 196 mm.

12386. Hong Kong, China. August 13, 1908. Length 174 mm.

11468. Kowloon, China. September 8, 1908. Length 118 mm.

9963. Kowloon. September 18, 1908. Length 178 mm.

6843. Kowloon. October 20, 1909. Length 304 mm.

above and on sides, silver gray on abdomen. Blackish brown blotch at pectoral origin (shown about size of pupil in figure).

25-575 A.N.S.P. Melbourne, Australia. Mrs. Agnes Kenyon. Length 625 mm.

25-576 A.N.S.P. Melbourne. Mrs. Agnes Kenyon. Length 635 mm.

A. H. L. P., No. 32694. Indian Archipelago. Royal Museum of Leiden. Length 218 mm.

A. H. L. P., No. 72591. Java. O. Bryant and W. Palmer. Length 75 to 185 mm. Six examples.

A. H. L. P., No. 72595. Batavia. O. Bryant and W. Palmer. April 2, 1909. Length 103 to 154 mm. Two examples.

A. H. L. P., No. 72593. Java. O. Bryant and W. Palmer. Length 88 mm.

A. H. L. P., No. 72596. Batavia. April 2, 1909. O. Bryant and W. Palmer. Length 141 mm.

Depth 3; head 3, upper profile very slightly arched. Snout 2 in suborbital depth to maxillary expansion; maxillary reaches $^{7}/_{8}$ to eye, length $2^{3}/_{5}$ in head; canines weak and teeth pointed; interorbital low.

Scales 52 in lateral line (57 on figure); 6 above, 13 below, predorsal forward opposite hind eye edge; apparently small postocular scale.

D. X, 9, fourth spine $2^{1}/_{3}$ in head, second ray $2^{1}/_{2}$; A. III, 8, third spine 4, second ray $2^{2}/_{3}$; caudal $1^{1}/_{5}$, deeply forked; least depth of caudal peduncle 3; pectoral $1^{1}/_{8}$; ventral $1^{1}/_{2}$. (Sauvage.)

Mozambique, Madagascar, Seychelles, East Indies. Valenciennes gives the following coloration: Olive-green on back, head and tail below more yellow; lips reddish, also base of preopercle. Cheek rayed by 5 oblique green bands, of which 3 upper from eye to lips, and other 2 interrupted and undulate. Spinous dorsal yellowish, edged orange and spots of flame gold and large dots of olive at base of each spine; membranes of soft dorsal golden, also pectoral and caudal rays yellow. Anal and ventral yellow. Length 200 mm.

Sauvage contends the present species is different from Lethrinus miniatus. Lethrinus waigiensis and Lethrinus olivaceus were identified with Lethrinus miniatus by Bleeker, though Sauvage, after an examination of the types, found they differed chiefly in smaller scales and less extended snout. Lethrinus waigiensis was based on an example but 115 mm. long and described as brown on the back, silvery below. Snout blackish and body clouded with large blackish marblings. Some traces of brown bands on jaws.

Lethrinus microdon Valenciennes

Lethrinus microdon VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 295.

Bouro. - SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, p. 198, pl. 25, figs. 1-a (type).

C. N. M. P., two examples. Philippines. Commercial Museum of Philadelphia.

C. N. M. P., 30 examples. Philippines. 1923. Rev. Joseph Clemens. Purchased.

C. N. M. P., two examples. Orion. 1923. Rev. Joseph Clemens. Purchased.

C. N. M. P., eight examples. Orani. 1923. Rev. Joseph Clemens. Purchased.

C. N. M. P., twelve examples. San Fernando. 1923. Rev. Joseph Clemens. Purchased.

C. N. M. P., one example. Tuticorin, India. Madras Fisheries department. Length 110 mm.

134789 145

A513. Tapiantana Island. September 13, 1909. Length, 290 mm.

7338. Tara Island. December 14, 1908. Length, 282 mm.

4926. Tataan, Simulac Island, Tawi Tawi Group. February 20, 1908. Length, 253 mm.

8917. Tictuan Island. September 8, 1909. Length, 215 mm.

6428. Tilig, Lubang Island. July 14, 1908. Length, 248 mm.

5040. Anchorage at Sibutu Island, Sandakan, Borneo. February 28, 1908. Length, 273 mm.

A1511. Birabirahan Island, Borneo. December 31, 1909. Length, 290 mm.

A1437, A1470. Kait Point, Libani Bay, Celebes. December 29, 1909. Length, 223 to 275 mm.

A1351. Great Tobea Island. December 15, 1909. Length, 265 mm.

A1399. Tampotani Island. December 31, 1909. Length, 239 mm.

A1216. Gomomo Island. December 3, 1909. Length, 293 mm.

A1329. Tomahu Island, north end Boero Island. December 11, 1909. Length, 270 mm.

A1520. Doc Can Island. January 7, 1910. Length, 278 mm.

Lethrinus olivaceus Valenciennes

Lethrinus olivaceus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 295. (Anjer, Sunda Straits, Java. - PETERS, Arch. Naturg., 1855, p. 243 (Mozambique). - SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, p. 198, pl. 23, figs. 3, a-b (Madagascar; types of Lethrinus olivaceus and Lethrinus waigiensis; Seychelles).

Lethrinus waigiensis VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 297, (Waigiu; New Guinea).

1399

A. h. S. P., two examples. Bombay. Bombay Nat. Hist. Soc. 1925. Length 240 to 260 mm.

A. h. S. P., one example. Durban, Natal. 1929. H. W. Bell Marley. Length 195 mm.

A. h. S. P., one example. Durban. 1932. H. W. Bell Marley. Length 153 mm.

34

8 Point Leaded
Follow—Incl Caps

134789 114

10825. Langao Point, Luzon. June 24, 1909. Length 203 mm.

10878. Linibaues Cove, Manila Bay. February 8, 1909. Length 221 mm.

6033, 6034. Little Santa Cruz Island. May 28, 1908. Length 294 to 317 mm.

11360. Maagnas, Lagonoy Gulf, Luzon. June 17, 1909. Length 194 mm.

9202. Mahinog, Camiguin Island. August 3, 1909. Length 280 mm.

8516. Makesi Island, Palawan. April 5, 1909. Length 260 mm.

16923. Makesi Island. April 5, 1909. Length 218 mm.

12421, 12422. Malabang market, Mindanao. May 22, 1908. Length 171 or 172 mm.

6206. Malapascua Island. March 16, 1909. Length 218 mm.

6585. Maricaban Island near Sepoc Point. July 21, 1908. Length 260 mm.

6231. Medio Island, Galera Bay, Mindoro. June 9, 1908. Length 290 mm.

9359. Murcielagos Bay, Mindoro. April 21, 1909. Length 244 mm.

17685. Murcielagos Bay. August 9, 1909. Length 207 mm.

9215, 12581. Opol, Mindanao. August 4, 1909. Length 208 to 260 mm.

9615. Pagapas Bay, Luzon. February 20, 1909. Length 203 mm.

8200. Port Busin, Burias Island. March 8, 1909. Length 248 mm.

6545. Port Maricaban, Luzon. July 21, 1908. Length 252 mm. Orange band from pectoral to caudal peduncle.

8278. San Miguel Island, Tabaco Bay. June 4, 1909. Length 208 mm.

8641. Simaluc Sibi Sibi Island. September 23, 1909. Length 284 mm.

4999, 5000. Simonor Island, Tawi Tawi Group. February 24, 1908. Length 220 to 223 mm. Pale olivaceous crossed by 8 or 9 very indistinct darker bars along side. Distinct salmon red band from pectoral axil to lower side of caudal peduncle.

7850. Taganak Island. January 7, 1909. Length 280 mm. Pale reddish bands on side, 3 below lateral line wide as pupil. Inside mouth scarlet, but not to gill opening. Fins reddish.

1400

Alepes kalla (Cuvier)

Caranx kalla Cuvier, Hist. Nat. Poiss., vol. 9, p. 49, 1833 (type locality, Malabar; Mahe; Red Sea).

— Day, Fishes of Malabar, p. 83, 1865; Fishes of India, pt. 2, p. 219, pl. 49, fig. 5, 1876 (Madras); Fauna British India, Fishes, vol. 2, p. 160, 1889.

~~25-68 U.S.N.M.~~

~~Length 208 mm.~~

37780 U.S.N.M. Eastern Asia.
Length 58 to 71 mm. 8 examples.

48140 U.S.N.M. Hako, Japan.
N. Kozawa. Length 110 mm.

49463 U.S.N.M. Tokyo. Albatross
Collection. Length 153 mm.

49491 U.S.N.M. Hakodate, Albatross Collection.
Length 86 mm.

49523 U.S.N.M. Hakodate. Albatross
Collection (no. 1959). Length 360 mm.

50815 U.S.N.M. Hakodate. Jordan and
Snyder. Length 34 to 118 mm. 5 examples.

57510 U.S.N.M. Japan. C. L. Jouy.
(no. 567). Length 198 mm.

57721 U.S.N.M Japan. C. L. Jouy.
Length 144 mm.

59681 U.S.N.M. Matsushima Bay.
Dr. H. M. Smith. Length 138 mm.

1401

— Vinciguerra, Ann. Inst. Civ. Stor. Nat. Genova, ser. 3, vol. 10, p. 360, Aug. 23, 1926 (Varawala).

Amia bifasciata (non Rüppell) Fowler, Copeia, No. 58, June 18, 1918, p. 63 (Philippines).

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 65, 1906 (1907) (Bulan). — Jordan and Seale, Proc. Davenport Acad. Sci., vol. 10, p. 6, 1905 (1907) (Hong Kong); — Fowler, Copeia, no. 58, p. 63, June 18, 1918 (Philippines).

— Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, p. 599, 1912 (Batavia). — Weber, Siboga Exped., vol. 57, Fische, p. 398, 1913 (Macassar). — McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 139, April 21, 1915 (7 miles N.E. of Bowen, 16 fr.).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 215 (Delagoa Bay); Journ. Bombay Soc. Nat. Hist., vol. 30, no. 2, January 25, 1925, p. 317 (Tuticorin); vol. , no. , p. 6, November 1926 (Bombay; Delagoa Bay material; Calicut; Philippines); Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 270 (Drani; Arion; Philippines and Padang materials); Journ. Bombay Nat. Hist. Soc., vol. , no. , p. 258, October 20, 1927 (Bombay);

with age; D. III, 11 or 12, third spine longest, nearly twice shortest (last) ray in young, scarcely longer with age; caudal slightly emarginate; ventrals reach vent in young, half way with age.

Head and trunk very dark brown or bluish black. Cheeks, breast and belly silvery. Fins dark. Soft dorsal, 17.7 / 385.62 anal and ventral blackish. Young 7 to 150 mm. yellow, with dark vertical band through eye, broader one connects soft dorsal and anal. Pectoral axil dark. Fins light, except ventral, 3230.49 greater part of anal and part of soft dorsal, which dark. Length to 550 mm.

(Barnard.)

7 0 4 / 28 & South Africa, Natal. Feeds on echini, 29 0 / 4 crustacea and gorgonias.

vol. 33, no. 1, p. 110, September 30, 1928 (Bombay); Mem. Bishop Mus., vol. 10, p. 148, 1928 (compiled); Proc. Acad. Nat. Sci. Philadelphia, vol. 81, 1929, p. 605 (Hong Kong); ~~vol. 86, 1934, p. 150 (Bangkok)~~.

— McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 185, Sep. 10, 1929 (reference).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 150, 1934 (Bangkok); vol. 87, p. 140, 1935 (Bangkok; Pakanam).

Hoplegnathus aulgoensis Gilchrist and Thompson, Marine Biolog. Rep. South Africa, vol. 3, 1916, p. 56, fig. (young.)

Depth 2 to 2 2/5; head 2 2/3 to 3 1/2. Eye 2 1/2 to 5 1/2 in head, with age slightly less than snout, 2 in interorbital; preopercle edge serrulate in young; opercular spine pointed in young, pointed to more or less rounded with age, sometimes irregularly worn edge appearing serrate. Gill rakers 15 to 17 below.

Scales 70 to 77 in lateral line; 25 to 27 above; interorbital space scaleless.

D. XII, 11 to 14, spinous fin nearly or quite twice soft fin, median spines longest, 2/3 longest rays in young, not over half with age; soft dorsal edge straight or somewhat concave

Caranx (Selar) kalla Kluzinger, Fische Roth. Meer., vol. 1, p. 97, 1884.
— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 216, fig. 44, 1931 (Bagan Api Api; Batavia; Tandjong Priok; Madura; Macassar).

[1911]. Translucent pearly. Dusky stripe across snout through eye and backward to caudal, disappearing in death except on head. Caudal with dusky spot. Front of spinous dorsal obliquely dusky. Front of soft dorsal whitish, terminal and vertical edges blackish. Anal like soft dorsal but less marked. Caudal tip blackish.

1 example. Port Dupon, Leyte Island. March 17, 1909. Length 27 mm.

4 examples. Port Jamelo, Luzon. July 13, 1908. Length 67 to 92 mm.

12661. Port San Pio Quinto, Camiguin Island, Camiguin Island, China Sea, vicinity Batanes. November 10, 1908. Length 70 mm.

8301 and 8302. San Miguel Island, Tobaco Bay, east coast Luzon. June 4, 1909. Length 54 to 59 mm.

Caranx & calla Günther, Cat. Fish. Brit. Mus., vol. 2, p. 433, 1860 (Sumatra; Moluccas; China; Amoy). — Bleeker, Ned. Tydsr. Dierk., vol. 4, p. 131, 1874 (reference). — Macleay, Proc. Linn. Soc. New South Wales, vol. 4, p. 63, 1879 (Solomons). — Bleeker, Ned. Tydsr. Dierk., vol. 4, p. 131, 1874 (reference). — Meyer, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, p. 25, 1885 (Manila Bay). — Elera, Cat. Fauna Filipinas, vol. 1, p. 509, 1895 (Luzon; Manila Bay). — Bogorza, Ann. Soc. Españ. Hist. Nat., Madrid, vol. 17, p. 290, 1888 (Philippines; Manila Bay). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 250, 1907 (1908) (Iloilo; Manila). — Gilchrist and Thompson, Ann. South African Mus., vol. 6, pt. 3, p. 243, 1909 (Natal); Ann. Durban Mus., vol. 1, pt. 4, p. 383, May 21, 1917 (reference).

Selar calla Bleeker, Verh. Batavia. Genoot. (Bengal.), vol. 25, p. 44, 1853 (reference). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 537, Oct. 1927 (Natal; Delagoa Bay).

Alepes calla Ogilby, Mem. Queensland Mus., vol. 3, p. 62, pl. 20, 1915 (off middle Queensland).

Cru 129 Aplegnathus conwaii Richardson

Aplegnathus conwaii Richardson, Proc. Zool. Soc. London, vol. 8, August 1840, p. 27. Australia?

Aplegnathus conwayi Richardson, Trans. Zool. Soc. London, vol. 3, 1842, p. 144, pl. 9, fig. 1.

Hoplegnathus conwayii Günther, Cat. Fishes Brit. Mus., vol. 3, 1861, p. 357 (copied).

Hoplegnathus conwayi Barnard, Ann. South African Mus., vol. 21, pt. 2, October 1927, p. 505, pl. 22, fig. 2 (False Bay, Agulhas Banks, Algoa Bay, Natal).

Ichthyorhamphos pappei Castelnau, Mém. Poiss. Afrique Australe, 1864, p. 35. Kalk Bay.

Hoplegnathus pappei Thompson, Marine Biolog. Rep. South Africa, no. 4, 1918, p. 75 (references).

Caranx para Cuvier, Hist. Nat. Poiss., vol. 9, p. 58, 1833 (type locality, Malabar). — Bleeker, Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 56, 1852 (Batavia, Cheribon, Tegal, Samarang, Pasuruan, Java; Tandjong and Probaja, Madura); (Nal. Ichth. Bengal), vol. 25, p. 44, 1853 (reference); Nat. Tijds. Ned. Indië, vol. 7, p. 312, 1854 (Bantem); vol. 11, p. 419, 1856 (Muntok, Banka); vol. 12, p. 214, 1856 (Nias); vol. 15, p. 242, 1858 (Singapore); vol. 16, p. 407, 1858 (Japara, Java); Act. Soc. Sci. Ind. Neerl., vol. 3, No. 5, p. 2, 1857-58 (Macassar); (Sumatra), p. 12, 1859 (Benculen); Ned. Tijds. dierk., vol. 2, p. 173, 1865 (Siam; compiled). — Day, Fishes of Malabar, p. 85, 1865. — Kner, Reise Novara, Fische, p. 153, 1865 (Java).

c.[2] Five black vertical bands. robinsoni.

c.[2] Body covered with blackish spots, smaller and more numerous with age. punctatus.

Cuvier

Selar para Bleeker, Nat. Tijds. Ned. Indie, vol. 18, p. 367, 1859 (reference); Act. Soc. Sci. Ind. Neerl. (Celebes), vol. 8, p. 39, 1860.

Caranx cambon Cuvier, Hist. Nat. Poiss., vol. 9, p. 60, 1833 (type locality, Batavia). — Bleeker, Nat. Geneesk. Arch. Ned. Indie, vol. 2, p. 517, 1845 (Java); Verh. Batavia. Genoot. (Madura), vol. 22, p. 4, 1849 (Tan-jong; Arosboja); (Mid Java), vol. 23, p. 8, 1850.

Analysis of [redacted] species 6 Lt on c-4

a.' Aplegnathus. Spinous dorsal nearly or quite twice long as 11 to 14 rayed soft dorsal; interorbital mostly naked.

b.' Young with dark vertical band through eye, broader one connects soft dorsal and anal; bands fade with age. conwayi.

b.2 Five dark transverse bands, narrowing below. woodwardi.

a.2 Scarostoma. Spinous dorsal slightly less than or not more than 1 2/5 long as 15 to 21 rayed soft dorsal; interorbital mostly scaly.

c.' Body with vertical blackish bands.

d.' Interorbital naked;

seven dark vertical bands. fasciatus.

d.2 Interorbital scaly.

e.' Five broad blackish vertical bands, both resulting pale bands as well as dark bands variably blotched or spotted darker.

Cat. 3 rows only insignis.

? Caranx microchir Cuvier Valenciennes),
Hist. Nat. Poiss., vol. 9, p. 59, 1833
(type locality, Sunda Sea).
Selar microchir Bleeker, Act. Soc.
Sci. Ind. Neerl. (Sumatra), vol. 8,
p. 30, 1860 (reference).
Caranx (Selar) microchir Weber
and Beaufort, Fishes Indo Austral.
Archip., vol. 6, p. 219, 1931 (note).

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Family Aplegnathidae Carl 21

Body rather short and deep, moderately compressed. Mouth small, not protractile. Maxillary not concealed. Teeth continuous, with structure of bones forming sharp trenchant jaw edge, like beak in parrot fishes. No teeth on palate. Nostrils paired. Gills 4, slit after last. Gill rakers 20 or 21. Gill membranes free from isthmus, broadly united. Pseudobranchiae large. Branchiostegals 6 or 7. Air bladder present. Pyloric coeca few. Suborbital shelf present. Scales very small, ctenoid. Soft vertical fins scaly basally. Lateral line single, complete. Dorsal single, spines 12 and spinous fin larger than soft. Anal spines 3, soft anal like soft dorsal. Caudal truncate or emarginate. Ventrals thoracic, with spine and 5 rays, with

Selar kuhlii Bleeker, haturk.
Tijds. Ned. Indië, vol. 1, p. 360, 1850 (355)
(type locality, Batavia; Cheribon;
Surabaja; Kammal; Tandjong); vol.
2, p. 210, 1851 (Boeloekomba); vol. 3,
p. 53, 1852 (Singapore), p. 409 (Tampit),
p. 717 (Pankalpinang), p. 740 (Macassar),
p. 741 (Boelockomba); Verh. Batavia.
Genoot. (Makreel.), vol. 24, p. 54, 1854
(Java localities); hat. Tijds. Ned. Indië,
vol. 7, p. 227, 1854 (Macassar); vol. 8,
p. 393, 1855 (Amboina); vol. 9, p. 282,
1855 (Macassar), p. 394 (North Pasuruan);
vol. 10, p. 347, 1856 (Rio, Bintang);
vol. 11, p. 416, 1856 (Muntok, Banka);
vol. 13, p. 479, 1857 (Prigi, Java);
Act. Soc. Sci. Ind. Neerl. vol. 6, no. 2, p. 4, 1859 (Doréh, New Guinea);
vol. 8, p. 12, 1859 (Benculen, Sumatra),
vol. 8, p. 12, 1859 (Benculen); hat.
Tijds. Ned. Indië, vol. 20, p. 198, 1859-
60 (Badjoa); vol. 21, p. 138, 1860 (Muntok);

Generally dark brown, with 5 broad blackish brown bands, wider than pale interspaces; both pale and dark and pale bands with still darker blotches, spots or streaks, variable, though more or less vertically strewn. Jaws and snout pale. Body bands reflected on dorsals and anals, soft portions of which also blotched or with darker markings. Caudal with dark transverse basal blotch, terminally vermiculated irregularly with blackish brown. Pectoral pale terminally, darker basally, where small obscure dark spots; fin base brownish black. Anal blackish terminally, pale brown basally.

Chili, Peru.

Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 64, 1861 (Pinang).

Caranx kuhlii Fowler, Occas. Pap. Bishop Mus., vol. 8, no. 7, p. 378, 1923 (Honolulu); Mem. Bishop Mus., vol. 10, p. 145, ~~XXXXX~~ pl. 12 A, 1928 (Honolulu; Koko Head).

Caranx kuhli Fowler, Bull. Bishop Mus., no. 22, p. 25, 1925 (Honolulu).

Caranx acanthura (not Valenciennes) (Kuhl and Van Hasselt) Bleeker, Verh. Batavia. Genoot. (Makreel.), vol. 24, p. 54, 1852 (type locality, Java) (name in synonymy).

½ of fill filaments, which equal eye.

Scales 115 along lateral line to caudal base; tubes 71 in lateral line to caudal base and 6 more on latter; 32 scales above lateral line, 74 below, 61 predorsal forward opposite front nostril; 20 rows on cheek to angle of preopercle ridge and 7 more over preopercle flange transversely. Scales with 4 to 6 basal radiating striae, with 1 to 5 more auxiliary incomplete ones; 5 to 7 apical denticles, with 3 or 4 transverse series of basal elements; circuli coarse.

D. XI, 18, I. Fourth spine 2 1/4 in head, fourth ray 1 3/5 to 1 2/3; A. III, 13, I, second spine 3 7/8 to 4, first ray 1 3/4; caudal 1 1/4 to 1 2/5, irregularly slightly emarginate; least depth of caudal peduncle 2 1/4 to 2 2/5; pectoral 1 1/4; ventral 1 1/2.

Selar brevis Bleeker, hat. Tijdsr. hed. Indie, vol. 1, p. (355) 361, 1850 (Batavia, Java); Verh. Batavia. Genoot. (makreel.), vol. 24, p. 54, 1852 (Batavia).

Caranx brevis Günther, Cat. Fish. Brit. Mus., vol. 2, p. 435, 1860 (compiled). — Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 65, 1906 (1907) (Philippines). — Seale, Philippine Journ. Sci., vol. 5, p. 271, 1910.

Selar boelkmeyeri Bleeker, hat. Tijdsr. hed. Indie, vol. 9, p. (394) 398, 1855 (type locality, North Pasuruan, Java).

Caranx boelkmeyeri Günther, Cat. Fish. Brit. Mus., vol. 2, p. 439, 1860 (copied). — Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876 (Singapore). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 160, 1881 (Pallaboen).

Xcarotoma Kner, Sitz. Ber. Akad. Wiss. Wien, math.-naturwiss. Klasse, vol. 56, 1867, p. 715. Type Xcarotoma insigne Kner, monotypic.

Characters of the genus contained in those of the family.

Microptery x queenslandiae de Vis, Proc. Linn. Soc. New South Wales, vol. 9, pt. 3, p. 541, 1884 (type locality, Celepes halla queenslandiae Whitley, Rec. Austral. Mus., vol. 18, No. 3, p. 110, March 25, 1931 (reference) Trichiurus declivus (not Jenyns) Legassis and Mayer, Bull. Mus. Comp. Zool., vol. 32, p. 18, April 1898 (Cairns harbor in medusa Crambessa mosaica).

Caranx parasitus Garman, Bull. Mus. Comp. Zool., vol. 39, pt. 8, p. 232, ~~pl~~ Aug. 1903 (type locality, Cairns, in medusa). — Fowler, Mem. Bishop Mus., vol. 10, p. 148, 1928 (reference). — Mc Culloch, Australian. Mus. Mem., ~~VOL 5~~ No. 5, pt. 2, p. 187, Sep. 10, 1929 (reference).

axillary flap.

South Africa, Japan, Australia, Peru. One genus, with a few species, chiefly in the Pacific. They differ from allied percoids in the united teeth, suggestive of those of the scaroid or parrot fishes. They have no affinities with any other group of fishes with fused or united teeth.

Pantolabus parasitus Whitley, Rec. Austral. Mus., vol. 18, no. 3, p. 108, pl. 12, fig. 1, March 25, 1931 (Port Curtis, Queensland, under medusa; Pelican Spit, Pellew Islands from medusa).

makemo, Funafuti, Rangiroa, type of Upeneus preorbitalis). 1/m Whitley, Proc. Linn. Soc. New South Wales, vol. 54, pt. 2, May 15, 1929, p. 92 (Antong Java, Lord Howe Group).

Mulloidichthys samoensis Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 649 (Honolulu, Apia).

Upeneus preorbitalis Smith and Swain, Proc. U. S. Nat. Mus., vol. 5, 1882, p. 132. Johnston Island.

Pseudupeneus preorbitalis Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 263, fig. 111 (type).

Mulloides armatus De Vis, Proc. Linn. Soc. New South Wales, vol. 9, no. 3, Nov. 29, 1884, p. 458. Queensland.

1414

Alepes scitula Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 509, pl. 10 lower fig., 1904 (type locality, Padang, Sumatra).

Hoplegnathus fasciatus (Krefft & Schmelz), Schmelz, Cat. Mus. Godeffroy, No. 5, 1874, p. 30 (Chili); No. 7, 1879, p. 50 (Chili). Pöhl, Cat. Mus. Godeffroy, No. 9, 1885, p. 29 (Chili).

Depth 1 1/8 to 2; head 2 7/8 to 3, width 2 1/5 to 2 1/4. Snout 2 3/5 to 3 1/2 in head; eye 3 1/5 to 4 4/5, greater than snout in young to 1 7/8, with age; greater than interorbital in young to 1 2/5 with age; maxillary reaches to eye in young, only to second nostril with age; length 3 to 3 1/3 in head; 34 rows of tile like fused teeth, forming rough cutting edge along each dental margin; interorbital 3 1/3 to 3 2/3, broadly convex; preopercle edge feebly serrate around arch. Gill rakers 6+12, lanceolate,

Caranx nigripinnis (not Day) Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 14, 1906 (1907) (Cavite; part).

Caranx (Atule) migakamii Iwasaya, Ann. Carnegie Mus., vol. 15, p. 201, pl. 29, fig. 4, 1924 (type locality, Formosa).

Caranx microbrachium Fowler, Ann. Natal Mus., vol. 7, pt. 3, p. 420, text fig. 9, Oct. 1934 (type locality, Natal); vol. 87, p. 140, 1935 (Sriracha).

Cue 130

Genus Oplegnathus Richardson

Oplegnathus Richardson, Proc. Zool. Soc. London, pt. 8, August 1840, p. 27. Type Oplegnathus conwaii Richardson, monotypic.

Hoplegnathus Richardson, Trans. Zool. Soc. London, vol. 3, 1841, p. 144. Type Oplegnathus conwaii Richardson.

Hoplognathus (not Moely 1819, Chadoir 1835, Burmeister 1844) Günther, Zool. Record, 1865, Pisces, p. 184. Type Oplegnathus conwaii Richardson.

Scaradon Schlegel, Fauna Japonica, Poiss., fts. 5-6, 1844, p. 89. Type Scaradon fasciatus Schlegel, designated by Jordan, Genera of Fishes, pt. 2, 1919, p. 223.

Scarodon Schlegel, op. cit., fts. 15, 1850, p. 318. Fauna Japonica, Poiss. Type Scarodon fasciatus Schlegel.

Ichthyorhamphos Castelnau, Anim. Poiss. Afrique Australe, 1861, p. 35. Type Ichthyorhamphos poppei Castelnau, monotypic.

depth 2 2/3 to 3; head 3 to 3 2/3, width 2 1/8 to 2 1/5. Snout 3 1/3 to 4 in head from snout tip; eye 2 7/8 to 3 4/5, greater than snout, subequal with interorbital, adipose lids broad behind; maxillary reaches 1/3 in eye, expansion 2 to 2 1/4, length 2 1/2 to 3 in head from snout tip; interorbital 3 1/8 to 3 1/3, moderately elevated convexly. Gill rakers 10 to 12 + 27 or 28, slender, lanceolate, equals gill filaments or 2 in eye.

Scales 35 to 37 + 37 to 46 in lateral line; (last 7 on caudal base); 11 to 16 above, 19 to 24 below. Curved section of lateral line 1 1/2 to 2 1/5 in straight section; scutes in straight section enlarged, deepest 2 in orbit. Scales finely and closely adherent, cover chest and

breast. Scales with 14 to 26 series of vertical striae each side of median axis, more or less continuous.

Dorsal $\frac{I}{\equiv}$, $\frac{VIII}{\equiv\equiv}$ — $\frac{I}{\equiv}$, 23 or 24, third spine $2\frac{2}{3}$ to 3 in total head length, first branched ray $1\frac{2}{3}$ to 2; A. $\frac{II}{\equiv}$ — $\frac{I}{\equiv}$, 19 to 21, first branched ray $1\frac{9}{10}$ to $2\frac{1}{2}$; caudal equals head, deeply forked, upper lobe much longer; least depth of caudal peduncle 6; pectoral reaches $2\frac{1}{4}$ to $2\frac{1}{2}$ to caudal base or to fourth to twelfth scute of lateral line; ventral $1\frac{1}{2}$ to $2\frac{3}{4}$ in head.

Back dark gray or brown, sides and below silvery white. Large blackish blotch on opercle above, whole but little less than

eye. Dorsals and caudal tinged grayish, other fins whitish.

Red Sea, Arabia, Portuguese East Africa, Natal, Madagascar, Seychelles, India, Ceylon, Andamans, Malaya, East Indies, Philippines, Siam, Queensland, Melanesia, Polynesia. The very imperfectly noticed Caranx microchir Cuvier may possibly be a very young example of the present species.

D. 5461. Caringo Island (W.), N. 12° W., 4.9 miles (lat. 13°57'42" N., long. 123°06'42" E.), east coast of Luzon. In 11 fathoms. June 14, 1909. Length 48 mm.

23 examples. Catbalogan, Samar (taken from jelly fish). April 16, 1908. Length 24 to 78 mm.

Seven examples. Cavite (with medusa). January 11, 1909. Length 28 to 38 mm.

Three examples. Cebu anchorage. August 26, 1909. Length 32 to 38 mm.

Three examples. Cebu harbor. August 12, 1909. Length 38 to 48 mm.

One example. Jolo. February 14, 1908. Length 36 mm.

Eight examples. Jolo anchorage. March 5, 1908. Length 17 to 33 mm.

16 examples. Inalamgaya River, Palawan. December 26, 1908. Length 49 to 95 mm.

West Australia, South Australia, Victoria, Tasmania, New South Wales, Queensland. Mediterranean examples show gill rakers 7+9. Ogilby gives them as 4+9, with some rudiments for the Australian form. Barnard gives 9 or 10 on lower arch with some rudiments. According to Ogilby it reaches over 1830 mm. with a weight of 125 lbs., though the average is under 30 lbs.

Sciaena heinii Steindachner, based on a single example 415 mm. long is likely a fairly matured specimen of the present species, as its slightly emarginate caudal shows. It only seems to me to differ in a few more dorsal rays, not much however, beyond the range of variation for the species as I find them 26 to 29. In brief it shows:

depth 3 1/3; head 3 1/8. Snout 3 2/3 in

Five examples. Manila (from medusa). January 31, 1908. Length 24 to 29 mm.

Three examples. Manila (from medusa). April 25, 1909. Length 11 to 37 mm.

27 examples. Manila (from jelly fish - white papillon). April 29, 1908. Length 11 to 31 mm.

21 examples. Manila (from blue-spotted jelly fish). April 29, 1908. Length 24 to 52 mm.

Six examples. Manila anchorage (from jelly fish). April 28, 1908. Length 21 to 34 mm.

Eight examples. Manila Bay. (under jelly fish). December 6, 1907. Length 22 to 58 mm.

Four examples. Manila Bay, Laundi Landing. January 24, 1908. Length 15 to 55 mm.

with several flattened denticles at corner, ridge entire. Gill rakers removed.

Scales 60 to 64 in lateral line to caudal base and 24 to 34 more out over caudal fin; 10 above, 12 below, 6½ predorsal; scales smaller along body edges, breast, predorsal and fin bases; row of 4 large scales on cheek to preopercle ridge; caudal largely covered with small scales basally.

D. X, I, 27 to 27, fourth spine 2¼ in total head length, second ray 2 2/3; A. II, 7, second spine 4, second ray 2 2/5; caudal 1½; least depth of caudal peduncle 4; pectoral 1½; ventral 1 3/4.

Dull brownish above, silvery white on sides and below, fins and iris brownish.

Eastern tropical Atlantic, Mediterranean, Red Sea, Madagascar, Natal, South Africa,

Two examples. Manila harbor. January 27, 1908. Length 32 to 39 mm.

91 examples. Pancol (from jelly fish). December 25, 1908. Length 13 to 42 mm.

Four examples. Tacloban, Leyte. (from large medusa). April 12, 1905. Length 20 to 25 mm.

47 examples. Burabirahan Island, off Borneo (with jelly fish). December 31, 1909. Length 15 to 57 mm.

Two examples. Tawao, Borneo (from jelly fish). November 5, 1909. Length 12 to 23 mm.

One example. D. 5615. Tifore Island (C.), N. 40° W., 35 miles (lat. 0° 32' 30" N., long. 126° 31' 30" E.), Molucca Passage. 1m 1021 fathoms. November 22, 1909. Length 38 mm.

Sciaena neglecta Ramsay and Ogilby, Proc. Linn. Soc. New South Wales, ser. 2, vol. 1, 1886, p. 941. Broken Bay, New South Wales.

Sciaena heinii Steindachner, Anzeiger Akad. Wiss. Wien, vol. 39, nachr. 24, November 20, 1902, p. 317. Kischin, South Arabia; Denkschr. Akad. Wiss. Wien, math.-naturw. Klasse, vol. 71, pt. 1, 1907, p. 141, pl. 1, fig. 4 (Gischin).

Depth 4 3/4; head 3 1/2 to 3 7/8, width 2 3/5; snout 3 2/3 in head from snout tip; eye 6 to 6 1/5; maxillary reaches opposite hind pupil edge, expansion 5/6 of eye, length 2 1/8 to 2 1/5 in head from snout tip; mandible protruding; bands of villiform teeth in jaws and outer row of enlarged conical teeth in each, though especially enlarged and canine like toward front of upper; interorbital 3 7/8 to 4, convex; hind preopercle edge

1422

. Three examples. Foochow, China.
A. de C. Sowerby. Length 54 to 63 mm.
(with 87068 U. S. N. M.).

U. S. N. M., No. 56121.
Bureau of Fisheries (3782).
Length 85 mm. As Caranx djedaba.
Scutes 53.

1916, p. 112, pl. 35 (Queensland, New South Wales, Victoria, South Australia, West Australia, Tasmania). 1/m Waite, Records South Australian Mus., vol. 2, no. 1, April 23, 1921, p. 107, fig. 164. 1/m Mc Culloch, Fishes New South Wales, ed. 2, 1927, p. 58, pl. 24, fig. 211a.

Sciaena holobpidota antarctica Ogilby, Mem. Queensland Mus., vol. 6, December 19, 1918, p. 70, pl. 21 (Moreton Bay; Brisbane River).

Sciaena margaritifera Italy, Ann. Mag. Nat. Hist. London, series 4, vol. 15, 1875, p. 264. Port Natal. 1/m Regan, Ann. Natal Mus., 1908, p. 245 (Durban Bay). 1/m Gilchrist and Thompson, Ann Durban Mus., vol. 1, no. 4, 1917, p. 350 (compiled).

Corvina axillaris (not Cuvier) de Vis, Proc. Linn. Soc. New South Wales, vol. 9, 1884, p. 538. Brisbane River.

U. S. N. M., No. 56015. Philippines. Bureau of Fisheries (3888). Length 78 mm. As Caranx brevis.

U. S. N. M., No. 56167. Bulan, Philippines. Bureau of Fisheries (3767). Length 75? mm.

U. S. N. M., No. 72278. Iloilo, Philippines. R. C. McGregor. Length 75 mm.

U. S. N. M., No. 72597. Java. O. Bryant and W. Palmer. Length 98 mm.

U. S. N. M., No. 87067. Foochow, China. A. de Vowerby. Length 74 to 85 mm. Three examples.

8 pt. Leaded
Follow—Incl Caps.
134789 123

i². Vomer with few conic teeth in front --- Exynnis

h². Front teeth in both jaws cardiform, not canine-like; body more oblong or elongate --- Pagellus

g². Front teeth incisors, none canines.

m¹. Snout obtuse; incisors broad; molars 2 to 4 series --- Diplodus

m². Snout pointed; incisors narrow, produced; hind teeth very small and uniserial --- Puntazzo

a³. Scatharinae. Fixed incisors in front of jaws only; no molars, nor teeth on palate; herbivorous.

n¹. Cheeks scaled.

o¹. Incisors broad, notched at tip, uniserial, without cardiform teeth behind.

p¹. Body elongate, subcylindrical; dorsal spines 14 or 15 --- Boops

p². Body oblong, compressed; dorsal spines 11 --- Sarpa

1424

A. N. S. P., No. 27503. Padang, Sumatra. 1904. A. C. Harrison and H. L. Hiller. Length 143 mm. Type of Alopes reticula.

12697. Tara Island, Mindoro Strait. December 14, 1908. Length 83 mm.

24013. Tara Island. December 15, 1908. Length 72 mm.

14012. West coast Palaui Island, off northern Luzon. November 18, 1908. Length 73 mm.

[D. 5595]. Zamboanga Light, N. 31° W., 0.1 mile (6° 54' 00" N., 122° 04' 30" east), Mindanao. In 9 fathoms. October 6, 1909. Length 22 to 27 mm.

8889. Mabul Island, vicinity of Sibuko Bay, Borneo. September 29, 1909. Length 51 mm.

23108. Tomahu Island, vicinity of Bouro Island. December 11, 1909. Length 60 mm.

2 examples. Tomahu Island. December 12, 1909. Length 63 to 77 mm.

A. N. S. P., five examples. Philippines. Commercial Museum of Philadelphia.

A. N. S. P., one example. Delagoa Bay, Portuguese East Africa. 1922. H. W. Bell Marley. Length 167 mm.

A. N. S. P., four examples. Orani, Philippines. 1923. Rev. Joseph Clemens. Purchased.

A. N. S. P., fourteen examples. Orion, Philippines. 1923. Rev. Joseph Clemens. Purchased.

A. N. S. P., seventeen examples. Philippines. 1923. Rev. Joseph Clemens. Purchased.

A. N. S. P., six examples. Bombay, India. 1925. Bombay Nat. Hist. Soc. Length 155 to 185 mm.

Follow—Incl Caps
Leaded

o^2. Incisors narrow, lanceolate, with band of cardiform teeth behind; dorsal spines 10 or 11 - - - - Spondyliosoma.

m^2. Cheeks naked; opercle scaly; dorsal spines 10 - - - Gymnocrotaphus.

Genus Symphorus Günther

Symphorus GÜNTHER, Ann. Mag. Nat. Hist., ser. 9, vol. 4, 1872, p. 438.

(Type, Symphorus taeniolatus Günther, monotypic.)

Maxillary teeth in several rows, anterior partly canine-like. Preopercle edge denticulate. Pseudobranchiae well developed. Branchiostegals 7. Scales of trunk ctenoid, in 55 rows. Head and opercles all scaled, 5 to 10 rows on cheek, preopercle flange naked. Dorsal and anal scaleless, rays acutely produced, spinous fins greatly lower. Dorsal spines 10, rays 16 or 17. Anal spines 3, rays 9 to 11.

Large, brilliant sparoids of the Western Pacific, with soft dorsal and anal rays produced.

Analysis of species

a^1. White transverse collar at nape; black saddle on upper surface of caudal peduncle - spilurus.

a^2. No white transverse collar at nape; no black saddle on upper surface of caudal peduncle - forsteri.

1426

A. h. f. P., eight examples.
Bombay. Dr. F. Hallberg. 1925.
Purchased. Length 82 to 114 mm.

A. h. f. P., Two examples.
Bombay. Dr. F. Hallberg. 1925.
Purchased. Length 140 to 160 mm.

A. h. f. P., two examples. Tuticorin
Madras Fisher. department.
Length 97 to 101 mm.

8 pt. Leaded
Follow—Incl Cone
134789

No diplo

e¹. Cheek with less than 5, usually 3 (rarely 4) rows of scales ---------- Synagris

e². Cheek with more than 5 rows of scales.

f¹. Top of head scaly ---------- Dentex

f². Top of head naked ---------- Gymnocranius

a². Sparinae. [Front teeth conic or incisor-like; lateral teeth molar.

g¹. Front teeth conic, not compressed or incisor-like.

h¹. Front teeth in both jaws strong, decidedly canine-like; body mostly deep and compressed.

i¹. Palate toothless.

j¹. Molars uniserial ---------- Monotaxis

j². Molars biserial ---------- Chrysophrys Pagrosomus

j³. Molars in 3 or 4 series

k¹. Some anterior dorsal spines elongate and filamentous; longer than head ---------- Argyrops

k². Dorsal spines moderate. not prolonged, shorter than head.

l¹. Molars strong, lateral ---------- Sparus

l². Molars small, form innermost row of band of teeth; outer teeth conic but not canine ---------- Boopsoidea